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The "second generation" as actors of desegregation in Finnish cities?

A study of the residential mobility patterns of the descendants of immigrants in Helsinki, Tampere and Turku regions (1999–2015)

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Tiivistelmä – Referat – Abstract

This master’s thesis studies the residential mobility patterns of the “second generation”, i.e., the native-born descendants of immigrants, in Finnish cities. The focus of the study is on the first-time departures from the parental home, and especially on their timing and destination neighbourhood types, which will be reflected through the theoretical framework of spatial integration. The study aims to provide new empirical knowledge on the home-leaving second generation which will be used to reflect whether the classic theory of spatial assimilation manages to depict their residential mobility patterns in relation to the native-born Finns and first-generation immigrants.

The study analyses the differences in the timing and destination neighbourhood types of the home-leaving event using register-based longitudinal data on individuals between ages 16 and 32 in Helsinki, Tampere and Turku regions over the period 1999–2015. The neighbourhoods are classified either as concentrations or non-concentrations based on their share of inhabitants with an immigrant background. The study employs mainly discrete-time event-history methods in analysis. The impacts of the demographic and socioeconomic attributes on the home-leaving patterns are evaluated with logistic regression analysis.

The results suggest a general similarity of residential mobility patterns for the home-leaving second generation and their native-born Finnish peers while the first-generation immigrants remain a distinct group, especially by moving more often to concentrations compared to the two other groups. Among the second generation, the classic straight-line assimilation theory manages to depict the best the home-leaving patterns for the individuals with Western and West Asian and North African background. There is a small delay in the timing of the home-leaving for all individuals with an immigrant background compared to the native-born Finns which cannot be completely explained by the differences in their demographic and socioeconomic background. The parental neighbourhood type appears as a significant predictor for the destination neighbourhood type; having lived in a concentration as a child suggested increased odds of home-leaving to a concentration as well. One possible explanation for this is discrimination in the housing markets which is both impacting the possibilities for the young adults to pursue their independent housing careers and the neighbourhoods where they are growing up in. The remaining differences in the timing, after taking the differences in the demographic and socioeconomic background into account, is small but significant enough to be taken into account in further studies.

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Content

1. Introduction

The public discussion about residential segregation along ethnic lines is linked to the politically charged concern about the success of the integration of immigrants and their descendants. In Finland, these concerns are often based on the examples from other European countries with a large and settled immigrant population since the country itself has a relatively recent history as a destination for international immigration. Residential change and location are generally considered as one of the key dimensions in the integration process alongside with change in language skills, socioeconomic position and intercultural marriage (Alba & Nee, 2003). Integration should be also understood as an intergenerational process which starts with the ones who have migrated themselves and continues with their descendants. Consequently, conclusions about integration cannot be drawn only based on immigrants. (Alba & Nee, 2003, p. 215)

The studies about urban segregation in Finnish cities have been so far focusing on the residential mobility behavior of the first-generation immigrants but no such studies about their native-born descendants have been conducted yet. Thus, this master's thesis about the residential mobility patterns of the so-called "second generation" attempts to introduce the intergenerational approach in the discussion of spatial integration and ethnic segregation in Finland.

The widely-used term "second-generation immigrant" to describe the native-born children of immigrants is avoided in this study in order to avoid the perception that the parental immigrant status in inherited by their children born in the new country of residence and thus falsely, claiming this population as immigrants. Following the definition by OECD and EU in "Settling in 2018: Indicators of immigrant integration" integration is defined as *"the ability of immigrants (and their children) to achieve same social and economic outcomes as natives taking into account their characteristics"* (OECD, 2018, p. 17). Earlier studies of immigrant integration in Europe have noticed that native-born children with foreign-born parents tend to do worse than the ones with native-born parents suggesting that the immigrant status of the parents implies a disadvantaged point of departure for their children. In order to study these possible differences, a shortened term "second generation" is utilized to distinguish this population group from the native-born population with native-born parents (i.e. native-born Finns [1]) and from the first-generation immigrants.

Theoretical models for spatial integration are reflecting the experiences of past eras and they are often from other societal contexts, especially from the United States (e.g., classic spatial assimilation model) which is a country historically founded on international immigration. These theories provide

a valuable framework in reflecting the current day intergenerational spatial integration patterns and a starting point for this study, but it is important to simultaneously remain attentive in their applicability and the modifications required in order to translate these models into the present context of Finnish cities.

1.1. Purpose of the study

The purpose of this study is to provide new empirical knowledge on the residential mobility and home-leaving patterns of the Finnish "second generation", the native-born descendants of immigrants in Finland. The study utilizes a comprehensive longitudinal register-based data which allows following when and to which type of neighbourhoods the second generation is moving when leaving their parental homes. This study also seeks to compare the home-leaving patterns of the second generation to those of the native-born Finns and immigrants.

The study is anchored to the earlier research on ethnic segregation in cities and it aims to contribute to the understanding of the long-term impacts of permanent international immigration in local urban patterns, and the intergenerational dynamics of residential mobility and spatial integration in Finland. Understanding intra-urban residential change is vital in understanding spatial segregation. Previous studies have noticed that the residential mobility within the same region implies a crucial dynamic maintaining and strengthening the spatial segregation patterns due to selective migration (Vilkama, 2011, p. 137).

So far, there is only very little empirical knowledge of the residential mobility of the second generation in Finland. No study on ethnic segregation focusing specifically on the native-born descendants of immigrants in Finland has been conducted when writing this paper assumingly due to the country's rather recent history as a destination for international immigration, and thus, the young age structure of the population with an immigrant background. Nonetheless, Finland and its cities provide an excellent context in conducting such studies due to the availability of comprehensive register-data allowing follow-up studies on the population and information about their residential mobility and housing which are updated on a yearly basis. Unlike most countries, Finland also collects the information of the parents' country of origin which makes it possible to distinguish the native-born population into those with native-born parents (i.e. native-born Finns) and those with foreign-born parents (i.e. the second generation). This study seeks to utilize the advantage of the Finnish

register-based data and to open a discussion about the possibilities and necessities in conducting residential mobility studies on the second generation. Distinguishing the population by immigrant generation is a step forward in understanding the heterogeneity of the population with an immigrant background.

In 2018, 9 per cent of the population between age 15 and 31 in the EU area belonged to the second generation, defined as native-born having at least one foreign-born parent (OECD, 2018). This share is small but it is constantly growing. The second generation is a numerically growing and important group in Finland as well. The majority of this population is reaching their adult-age and entering the housing markets at the moment and in the near future. The final and the most ambitious aim of this study is to contribute to the current debate on (ethnic) urban segregation in Finland. The aim is not, however, to enter the discussion about whether the one type of home-leaving pattern is more desirable than the other but to rather provide early empirical knowledge about the residential mobility patterns of the descendants of immigrant to support the policy-development related to urban segregation.

1.2. Research questions

This study focuses on the residential mobility patterns of the individuals between age 16 and 32 in Helsinki, Tampere and Turku regions from 1999 to 2015. The event of interest is the first time departure from the parental home which is approached from two different perspectives; timing and destination. Since the study aims to contribute to the previous research on ethnic segregation, the destination neighbourhoods are here categorized based on their share of inhabitants with an immigrant background.

The study aims to answer the following research questions:

(1) Are there distinctive residential mobility patterns for the second generation in terms of the timing and the destination neighbourhood type of the home-leaving event compared to those of
    a) the native-born Finns?
    b) the first-generation immigrants?
(2) To which extent the differences in the residential mobility patterns for the home-leavers of different immigrant generations and (parental) countries of origin can be explained by the differences in their demographic and socioeconomic attributes?

1.3. Structure of the study

The background of the study is presented in chapter 2 by introducing the history of immigration in Finland and generally describing the composition of immigrants and their children. In addition, the chapter defines the key terms for the study. Next, chapter 3 synthesizes the exiting literature and previous research on spatial integration, the residential mobility patterns of the second generation, the event of home-leaving in general. The chapter also introduces the classic theory of spatial assimilation[2] and its critique which together form the theoretical framework for the study.

Chapter 4 describes the data and methods used in the analysis of the timing and destinations of the home-leaving event. This chapter includes information about the composition of the study population and the operationalization of the variables used in the study. Chapter 5 presents the results of the analysis separately for the timing and destinations neighbourhood types. Chapter 6 discusses the results of this study by comparing them to the previous knowledge and exploring the possibilities for further studies.

2. Background

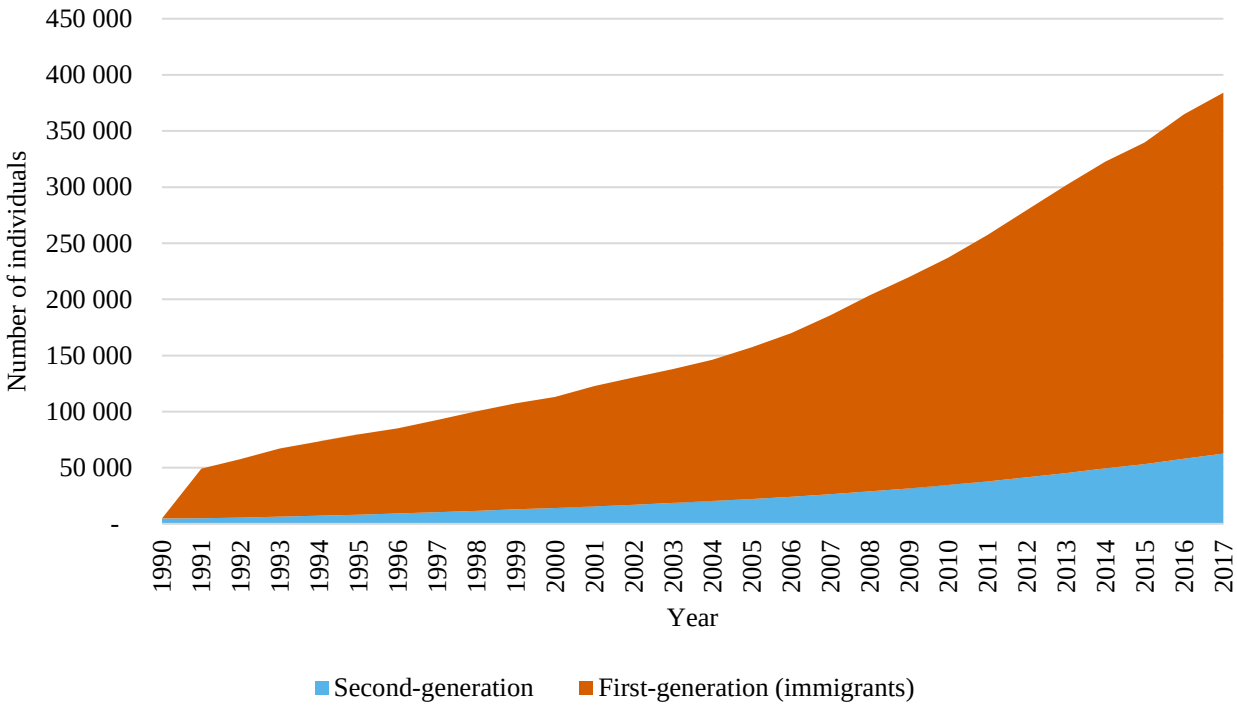
2.1. Immigrants and their descendants in Finland

In Europe, large scale international immigration intensified after the Second World War. Finland, however, did not become a country of immigration until the late 1980s and early 1990s after which the net migration rate of the country has remained positive (Statistics Finland, 2018a). The international immigration to Finland has not only increased but also diversified in terms of countries of origin and reasons for migration. Finland received its first international refugees and asylum seekers in the 1970s, first a small group of refugees from Chile, the majority of whom has now returned to their country of origin, then more notable groups from Vietnam (1970s–1980s), Russia (return migration of Ingrian Finns, 1990-2011), Somalia and Yugoslavia (1990s) (Martikainen, Saari, & Korkiasaari, 2013, p. 37). The most recent groups of refugees and asylum seekers in Finland come mainly from Afghanistan, Iraq and Syria (Finnish Immigration Service, 2019).

Nowadays, the most common reasons for immigration to Finland are family reunification and relationships. After joining the European Union, labour-driven and study-related immigration have also increased. (Finnish Immigration Service, 2019; Martikainen et al., 2013) Consequently, these

diversifying composition of the immigrant population also has an impact on their descendants, their resources and patterns in adapting to the new country of residence.

Figure 1. Population with an immigrant background by immigrant generation in Finland (1990–2017) (source: StatFi)



The estimates about the size of the population with an immigrant background in Finland varies depending on the definition (e.g., foreign citizenship, mother tongue, country of birth). In spite of this, it is clear that the share of the population with an immigrant background from the total population of Finland is rather small. Figure 1 shows the number of individuals with an immigrant background in Finland from 1990 to 2017. The definition of an immigrant background by Statistics Finland is both of the parents, or the only known parent, being foreign-born and the immigrant generation is based on the person's own country of birth; if a person with immigrant parents is born in Finland, he or she is classified as the second generation. Based on this definition, there were around 62 630 persons belonging to the second generation in 2017 in Finland, and their share from the total population of Finland was a little over 1 per cent while the share of first-generation immigrants from the total population of Finland was 7 per cent.

Figure 2. The second generation by age in Finland (1990–2017) (source: StatFi)

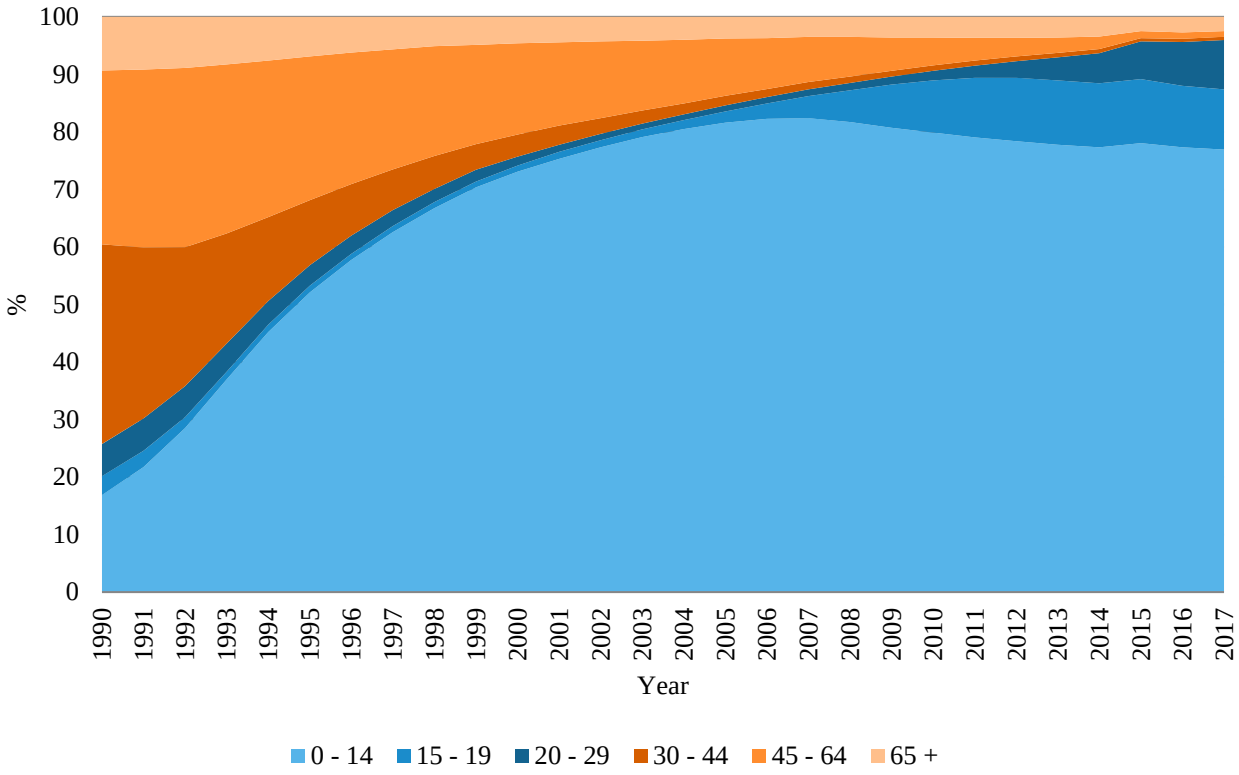
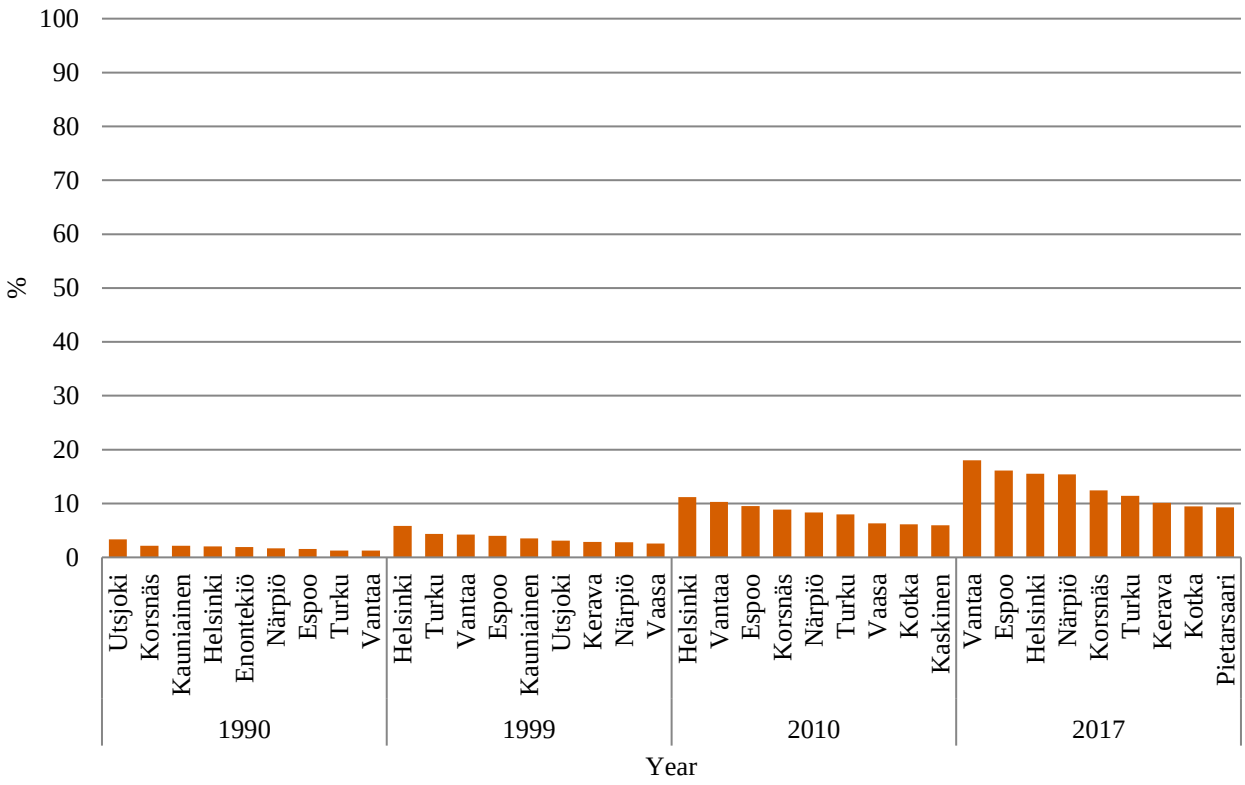


Figure 2 visualizes the proportion of different age groups in the second generation from 1990 to 2017. A distinctive characteristic of the second generation in Finland is their young age structure. A majority of this population is still under age 18.

The general residential mobility patterns of the population with an immigrant background is largely characterized by a strong movement towards urban centres (Rasinkangas, 2013). This is also partly linked to the young age structure of the population with an immigrant background. The propensity for residential mobility is generally higher for age 20–29 compared to other age groups (Statistics Finland, 2017). Figure 3 shows the ten municipalities in mainland Finland with the largest share of the population with a foreign-born background from their total number of inhabitants from 1990 to 2017. The growing share of inhabitants with an immigrant background is notable among the major cities, especially in the capital region (i.e. Helsinki, Vantaa, Espoo).

Figure 3. Municipalities with the highest share (%) of inhabitants with an immigrant background in mainland Finland (source: StatFi)



The fertility rate of the first-generation immigrant women is generally higher than the rate of among the rest of the population. In 2017, the fertility rate was 1.9 for immigrant women while the rate for the native-born women was 1.5. However, there were differences within immigrants by countries of origin; those from Somalia, Turkey and Iraq had a high fertility rate while the ones from Iran, China and Vietnam had a lower fertility rate compared to the native-born Finns. In addition, the fertility rate of immigrants in Finland has also been decreasing for the last decades. In the 1990s, the rate for immigrant women was still 2.5 which is 0.6 points higher than it was in 2017. (Statistics Finland, 2018b.)

Since the majority of the second generation is still young in Finland, it is not yet possible to study their fertility rate separately. However, studies from other European countries with more established immigrant population than in Finland show that the fertility rate of immigrants and their descendants have approached the average rate of the native-born population. (Helminen, 2018.) In Sweden, the fertility rate for women in the second generation is generally lower compared to the rate for native-born women. (Andersson & Persson, 2014).

It is clear that the second and further generations are having growing demographic importance in Finland as a result of positive net migration, the young age structure of the population with an immigrant background, and the high fertility rate of first-generation immigrants. The population with an immigrant background is also generally more concentrated in the major cities and this tendency is especially strong for young adults. As a consequence, the second generation represents a transformative population group for the demographic composition of the neighbourhoods in Finnish cities and they challenge a current understanding of the dynamics of spatial segregation.

2.2. Challenges in studying the second generation

Based on reviewing existing literature about the second generation, there appear to be at least three types of challenges studying this population group. Firstly, the young age structure of the second generation in Finland limits the selection of possible research topics. So far, the Finnish research has mainly focused on their educational achievements and performance at school (e.g., Ansala, Hämäläinen, & Sarvimäki, 2014; Hyvärinen & Erola, 2011), health and wellbeing (e.g., Ansala et al., 2014; Matikka, Halme, & Wikström, 2015; Saukkonen, 2016), transition to employment (e.g., Teräs et al., 2010) and poverty (e.g., Saukkonen, 2016). Studying their housing conditions and residential mobility is challenging because as most of the study population is relatively young and still living in their parental homes, their housing conditions and residential mobility patterns have been so far tied their parents' conditions and behavior.

Secondly, just like their parents, the second generation is also a highly heterogeneous group in terms of class, parental country of origin, ethnicity et cetera. This diversifies their resources and experiences in the integration process.

Thirdly, there is a lack of a common definition for the second generation which makes it difficult to compare studies and experiences. These challenges must be taken into account when reviewing the existing studies and when designing a study distinguishing the second generation as a population group.

2.3. Defining the second generation

Two additional notions are introduced to approach the challenges of defining the second generation in this study; immigrant generation and (parental) country of origin. The generational approach to the population with an immigrant background stresses, on one hand, the pathways of familial ("vertical") generations, from parents to their children and grandchildren, and on the other hand, the shared experience of the people belonging to the same societal ("horizontal") generation. (Martikainen & Haikkola, 2010, p. 10-16; Teräs, Lasonen, & Sannino, 2010, p. 93.) The country of origin here is defined based on either the parents' country of birth, as in the case of the second generation, or based on the own country of birth, as in the case of the first-generation immigrants. These two notions can be used as demographic variables to study integration as an intergenerational process.

Rubén G. Rumbaut (2006) has defined a widely used categorization for immigrant generations based on his empirical research of differences in integration in education, employment and language skills in the US context. His categorization provides a useful tool for analyzing the population with an immigrant background especially when quantitative data is available since the categories are based on the information about persons' own country of birth, country of residence, the parental status of immigration, and age or life-stage of arrival if the person has personally immigrated.

Rumbaut distinguishes the population with an immigrant background into the following decimal-generations:

- 1st-generation: immigrated as an adult
- 1.25-generation: foreign-born, immigrated as a teenager
- 1.5-generation: foreign-born, immigrated as a child
- 1.75-generation: foreign-born, immigrated as a toddler or baby
- 2nd-generation: native-born with foreign-born parents
- 2.5-generation: native-born with "mixed" parents, i.e. one native-born and one foreign-born parent. (Rumbaut, 2006.)

All the mentioned decimal generations are not always desirable to distinguish especially in analysis employing statistical methods and requiring sufficient sample sizes. This study will include the 2.0 and 2.5-generations in the definition of the second generation. Based on the logic of Rumbaut's categorization, and the data used in this study, a person from 3rd-generation onwards would be classified as a native-born Finn, i.e. native-born with native-born parents.

The literature from the United States distinguishes the "old" second generation" from the "new" second generation due to their long and established history as a country of immigration. The old second generation refers to the descendants of the European immigrants from the first immigration wave (1890–1920) while the children of post-war (1965 onwards) immigrants who were mostly from a non-European background are referred to as the new second generation. Both the American society and its structure, and the composition of the immigrants have changed from the first immigration wave. (Perlmann & Waldinger, 1997; Portes, 1996; Portes & Zhou, 1993.) While the highly educated and labour-driven immigration has been increasing and it is characteristic for contemporary migration, there is simultaneously immigration composed by less educated people, refugees, and asylum seekers which suggests differentiating points of departure for the newcomers and thus, differentiating personal and intergenerational experiences in adapting to the new country of residence (Portes, Fernández-Kelly, & Haller, 2005).

3. Review of the literature

3.1. Previous research: Home-leaving and the second generation

The home-leaving event, defined here as moving out from the parental home for the first time, is a milestone in the individuals' housing careers. It is a transitional event which the majority of the population will experience at some point in their lives. Thus, it is an event relatively easy to observe even in the population groups with relatively young age structures especially in Finland where the average age of home-leaving is lower compared to other European countries (Nikander, 2009).

The home-leaving event is also an interesting topic of research on its own. Moving out from the parental home can be interpreted as a step towards an independent housing career which makes it possible to study the individuals' residential mobility patterns without the constraints posed by the parental home. For example, segregation often appears more intense for children than for adults (e.g., Sabater & Catney, 2018). Previous research has noticed a variation of the experiences and timing of the home-leaving event in terms of educational level, employment, social class, relationship status, gender, and the housing market and national context (Holdsworth & Morgan, 2005).

Generally, individuals are residentially more mobile in their younger age than in their later age. While there are different terms in referring to a process of residential relation within the same country, the term residential mobility is here preferred over migration because of the temporary nature of the move

in the home-leaving event. (Korkiasaari & Söderling, 2007, p. 240.) It is very unlikely that the first apartment and destination neighbourhood for a young home-leaver will be permanent. However, for an individual, the home-leaving event is the first step towards an independent housing career where she or he is not directly constrained by the housing and location choices of their parents. The residential mobility patterns of young adults have been studied as an indication for their future behaviour and these studies assume that the events and living environment in the early stage of housing career will have an impact on the residential mobility behaviour at a later age as well (Sabater & Catney, 2018).

3.1.1. Timing of the home-leaving event

In Nordic countries, the average age of moving out from parental homes is low compared to the rest of Europe (Nikander, 2009). The differences between countries in the timing are linked to the welfares state models which shape the possibilities of the young adult for economic, and thus also residential, autonomy from the parents. The timing is less dependent on the cultural perception of autonomy and more linked to the structural and economic resources available for the young home-leaver. (Villeneuve-Gokalp, 2000.) The cultural perception of autonomy is however also impacted by the welfare state model; in Finland for example, the strong ethos individualism has had an impact on the development of the universal economic support system for young adults from the state, such as study grant and housing allowance. The availability of economic support from the state is encouraging young adults to start their independent housing careers at a young age. (Oinonen, 2013). There is also empirical evidence from other Nordic countries that higher parental income has generally a delaying effect on the timing of the home-leaving for young adults. The direction of the effect does however also vary by ethnic groups. (Skovgaard Nielsen, 2015.)

Besides economic resources, there are also other structural factors affecting the possibilities of home-leaving and housing opportunities for young adults. A survey study on the housing preferences and experiences of youth in Finland concludes that the position in housing markets is weaker for the individuals with foreign background compared to the ones with a native-born background. In this study, a foreign background is defined as having two foreign-born parents. (Kilpeläinen, Kostiainen, & Laakso, 2015.) One major explanation for the different positions for the youth in housing markets is the stronger concentration in major cities for the youth with foreign background compared to the native-born. The housing markets in these cities are challenging and young people face difficulties in

finding suitable and affordable housing there in general. However, the youth with a foreign background face more challenges in tackling these difficulties compared to their native-born peers because of racism and discrimination, dependency on social housing, lack of information on the housing markets, and lack of financial support from the parents. (Kilpeläinen et al., 2015, p. 76-83.)

Swedish studies have also noticed that young adults with a foreign background are staying at their parental home longer than the native-born youth. Simultaneously, however, the average home-leaving age is also increasing for the native-born Swedes because of the difficulties in the housing markets. (Boverket, 2013.) A similar tendency of delay in general home-leaving age has also been observed in Finland. The share of young people living in their parental home has ceased decreasing and it has even increased, which is opposite to the general decreasing trend of the previous two decades. This change in the trend suggests a delay in the home-leaving event in general and/or an increasing number of young people returning to their parental home. (Statistics Finland, 2015.)

3.1.2. Destinations neighbourhood types

Previous studies from the United States and Europe are arguing that the second generation resembles the native-born population with native-born parents and their residential mobility trajectories suggest generally speaking an improvement compared to their parents, immigrant peers and native-born peers belonging to local ethnic minority groups, as in the case of the US.

According to Tran (2019), who studied the "new" second generation in the US by focusing on the changes in individuals' neighbourhood environments, the residential mobility trajectories of the second generation are more often characterized by improvements of the neighbourhood environments in terms of the average household income and the share of "white" inhabitants in their neighbourhoods. The white population live consistently in more advantageous neighbourhoods while the second generation is moving away from the ethnic clusters of their parental neighbourhoods, and thus, approaching the white population's environments. This improvement for the second generation is observed by comparing the individuals' neighbourhood environment at birth to the one in young adulthood but also in comparison to the trajectories of their "black" peers, the native-born minorities. The white population live consistently in more advantageous neighbourhoods while the second generation is moving away from the ethnic clusters of their parental neighbourhoods, and thus, approaching the white population's environments. There is thus evidence that the residential mobility behaviour of the new second generation in the US is breaking the traditional dynamic of ethnic

segregation in a country where the rigid dividing line has been between the white population and the native minority groups, i.e. black and Latinos. (Tran, 2019.)

Results similar to Tran's study have been also obtained in the Nordic context. A study by Skovgaard Nielsen (2016) uses register data and event history methods to study the intergenerational impacts of ethnic segregation in Denmark. She is interested in whether home-leaving for Turkish immigrants and descendants (i.e., the second generation), Somali immigrants, and the native-born Danes of age 16 onwards move to "ethnic" and "non-ethnic" destination neighbourhoods. The binary categorisation for destination neighbourhood types is based on the share of inhabitants with foreign background from the total of inhabitants in the neighbourhood. The threshold used in Nielsen's study is 30 per cent. The predictors included in the study are mostly time-dependent, related to the life-course, and measuring individual and parental socioeconomic integration. The study concludes that the home-leavers from ethnic minority groups have a higher hazard of moving to an ethnic neighbourhood compared to the native-born Danes but this hazard is lower compared to their parents'. The difference between the ethnic minorities and the native-born Danes in destination neighbourhoods also reduces notably when controlling the predictors in the study, suggesting that the differences in the background are important in explaining the destinations for home-leavers.

In Finland, the population with an immigrant background have a lower probability of moving from a low-income neighbourhood to a higher-income neighbourhood in Helsinki, Tampere and Turku regions compared to the native-born population (Vaalavuo & Kauppinen, 2018). The second generation has a higher probability of moving in general compared to the native-born but this can be explained by the younger age structure of the second generation, and consequently, their higher tendency of residential mobility in general. The study uses a broad definition for the second generation (from 1.5 to 2.5-generation). The difference in moving to the high or low-income neighbourhood between the ones with an immigrant background and native-born remained even after controlling the key socioeconomic and demographic attributes. The native-born population is used as the group of reference. After controlling the differences in the backgrounds, the difference in destination neighbourhood types disappears only for the immigrants from Western countries and the second generation in Tampere. (Vaalavuo & Kauppinen, 2018.)

The previous studies also suggest heterogeneity of the second generation in their residential mobility patterns due to differences in the ethnic and socioeconomic background. The demographic composition of the childhood environment is an important predictor of the neighbourhood

environment in later ages (Tran, 2019; Skovgaard Nielsen, 2016). For example, in Denmark having lived in a neighbourhood where there is an over-representation of ethnic minorities also predicts a similar type of neighbourhood as a destination for all home-leavers, native-born Danes included (Skovgaard Nielsen, 2016). Another study focusing on neighbourhood biographies in Sweden concludes that the exposure to poverty in the childhood neighbourhood suggests thus a disadvantageous neighbourhood as an adult as well. The effect is especially strong and persistent among the population with a foreign background. (van Ham, Hedman, Manley, Coulter, & Östh, 2014.)

Another intergenerational dynamic present in predicting the residential mobility pattern of the second generation is related to parental socioeconomic support which can affect both the timing, as mentioned in the previous chapter, and the destination neighbourhood type according to existing knowledge. A Dutch study by Hochstenbach and Boterman (2017) conducted on the home-leavers in Amsterdam argues that the parental socioeconomic class and financial status have greater importance in explaining the residential mobility attainments of the young adults compared to the personal attributes. It is twice more likely for the home-leavers with wealthy parents to move to a high-status neighbourhood compared to the home-leavers from with less advantageous background after adjusting all personal attributes. In other words, the study stresses the importance of intergenerational financial support in young adults' residential mobility patterns and thus, and it argues that this support has an important role in gentrifying the city. (Hochstenbach & Boterman, 2017.) A similar study from Denmark, however, did not notice that the parental socioeconomic status, measured in household income and households' social group, would have an impact on the destination neighbourhood types for home-leavers. (Skovgaard Nielsen, 2016.)

The difference in the conclusion on the effect of parental socioeconomic status on destination neighbourhood types for home-leavers between Skovgaard Nielsen's and Hochstenbach's and Boterman's studies might be possible to explain by the differences in the country context and welfare state model. The latter study is also delimited into one city while Skovgaard Nielsen studied the whole of Denmark. The difference in outcomes might thus result from the stronger importance of economic factors in housing in cities where the housing markets are more competitive and prices elevated compared to the rest of the country.

In the Netherlands, the second generation with a Western background is noticed to be approaching the residential mobility patterns of their native-born peers. They are moving to the same

neighbourhoods as the native-born population and they are also moving to these neighbourhoods more often than their immigrant parents. (Zorlu & Latten, 2009.) The mobility pattern for the second generation with non-Western background remains differentiated from the native-born Dutch. The same study also argues that for the native-born Dutch and immigrants with a Western background, the increased probability of residential mobility is linked to an increased probability of moving to a neighbourhood with a low share of non-native population. This similar link is not observed in the mobility patterns for the other groups in the study. (Zorlu & Latten, 2009.)

Overall, young adults and their residential mobility patterns are important in the process of desegregation. A study from England and Wales by Sabater and Catney (2018) argues that the levels of segregation change through individuals' life course across ethnic groups. According to their study, the young adults between age 15 and 24 have a notably lower level of segregation in their living environment compared to children and seniors. This conclusion applies to almost all ethnic groups distinguished in the study. The study also shows evidence that young adults tend to live in ethnically mixed neighbourhoods more often than their parents. Sabater and Catney predict a dynamic of desegregation based on the previous results, the growing demographic importance of the young generation of ethnic minorities, and the assumed path-dependency of the early stage of housing careers having an impact on the future mobility patterns. (Sabater & Catney, 2018.)

3.2. Theoretical framework: residential mobility and spatial integration

This chapter aims to construct a theoretical framework for the study about the residential mobility patterns for the second generation. Both classic and contemporary theories for studying the spatial integration and residential change of immigrants and their descendants are presented in this chapter as complementary rather than as competing ideas. The theoretical literature presented here originates mainly from the United States. European and contemporary studies are included in reflecting the applicability of the classic assimilation framework of spatial integration and contesting its relationship to other societal integration assumed by the classical theories.

3.2.1. Classic approach: straight-line assimilation

The spatial adjustment patterns for immigrants and their children have been famously theorized by the sociologist of the University of Chicago in the United States in the 1920s and 30s. These sociologists defined the crucial questions for studying human behaviour in an urban environment. Even if the answers have been contested by contemporary studies, these same questions are still relevant and interesting for urban researches today. (Park, Burgess, McKenzie, & Janowitz, 1967). Among these crucial questions, there is the issue of urban settlements for the immigrant population and ethnic minorities. The classic approach is strongly anchored in the idea of the American society as a "melting pot" where the adjustment for a newcomer is a linear and natural process (Park et al., 1967). In addition, there is a strong assumption of determinism in this process where residential areas are seen as forming a hierarchic urban structure and thus, residential mobility behaviour is considered as a successive process following socioeconomic and cultural adaptation.

Park et al. (1967) used a "concentric ring model" to illustrate the residential mobility patterns in a city. The model divides the city into zones based on their characteristics and functions. Residential differences and distance between population groups such as the mainstream population, immigrants, and local ethnic minority groups, are considered as a spatial manifestation of social and cultural distance in an urban environment. (Park et al., 1967, pp. 54–58.) In other words, according to this theory, spatial closeness to the mainstream population is considered as a sign of successful integration for immigrants and their children in American society. In other words, this classic model proposes "straight-line assimilation" which assumes that the immigrant groups will eventually become completely mixed with the mainstream population as they are accumulating economic resources, going through the process of socialization, and marrying and cohabiting inter-ethnically. (e.g., Peach, 1997).

The descendants of immigrants have a central role in the spatial assimilation process according to the classic approach. The concentric ring model describes immigrant clusters as segregated and disadvantaged areas. These areas are mainly functioning as entry points for newcomers and they represent places between the new and old world, for immigrants and residing in these areas is seen as a necessary but transitory phase. (Park et al., 1967, pp. 56). The second and later generations are assumed to be economically and culturally approaching the mainstream population, and thus, they would proceed to move to the residential zones next in the hierarchy, further from their parental neighbourhood and closer to the mainstream areas. (Park et al., 1967, pp. 27-28, 56). If the differences

in residential areas and spatial distance remains after a longer period of time has passed, these differences would be interpreted as signs of an unsuccessful integration process. The classic approach would interpret these persisting differences between the major population and the minority groups as results of socioeconomic differences while abandoning the significance of the immigrant background or ethnicity in the possible explanations (Peach, 1997, p. 210).

3.2.2. Pluralist approach: segmented assimilation

While the classic approach to spatial integration has been widely used in both research and political debate, it has been also widely contested by contemporary studies. One major reason for this critique is the change of the societal context. The straight-line assimilation model was formulated to describe the first wave of immigration almost a century ago in the US, and since, both the receiving society and the immigrants have changed. (Alba & Nee, 2003) It is also important to reflect the limitations of the American theories in explaining the residential mobility patterns of immigrants in Europe; the socioeconomic and ethnic divisions are less rigid in European countries than in the US, and in most of the countries, the welfare state plays a crucial role in the integration process (Musterd, 2003).

Another reason for the critique is the ethnocentric idea of hierarchy between cultures and an assumption of cultural homogeneity in the classic approach; a middle-class white Anglo-Saxon protestant (WASP) is presented as the norm, "the mainstream", towards which immigrants and children are expected to be assimilated into. In other words, the classic approach allows an assimilation process to one direction only and it simplifies the cultural exchange between different population groups, the heterogeneity of these groups, and the potential positive social and economic resources provided by the ethnic minority communities. (Alba & Nee, 2003.) Thus, the critique insists on the need for a pluralist approach.

The idea of segmented assimilation is introduced by Portes and Zhou (1993) to describe the assimilation process for the second generation of the second wave (1965-) of immigration in the US. Complementing the classic approach, the contemporary model for spatial integration considers multiple possible outcomes for the assimilation process. According to this model, the assimilation process can take multiple directions and it can vary by sectors in a society where assimilation into one does not necessarily suggest assimilation in another. The classic approach leaves the responsibility of assimilation for the immigrant while the contemporary approach stresses the

importance of contextual factors such as policies and values of the receiving society, personal resources, and the resources and values of the ethnic community. (Portes & Zhou, 1993.)

The diversity of contextual and personal factors also suggest a diversity of assimilation patterns. Based on empirical research on the "new" second generation in the US, Portes and Zhou (1993) distinguish at least three possible assimilation patterns; straight-line assimilation, downward assimilation, and segmented assimilation. They do not reject the classic approach but instead, they provide alternative models in understanding the diversity of patterns in spatial integration in contemporary societies. The pattern of downward assimilation describes a process where the adjustment process takes the direction of the local urban poor and it acknowledges the heterogeneity of the mainstream population. In segmented assimilation, the assimilation can occur in a specific segment of the society, such as in the economic sphere, while simultaneously remaining in close relationship with the ethnic minority community and culture. (Portes & Zhou, 1993.) These multiple patterns in assimilation suggest thus multiple possible residential mobility patterns and outcomes in the urban structure, from spatial closeness and mix of population groups to spatial segregation. Multiple patterns can exist simultaneously in a city depending on the group and context (Tran, 2019).

There are also studies questioning the spatial assimilation as a sign of socioeconomic integration as assumed in the classic approach. This assumption has served as a basis of the practice of spatial mixing of ethnic and socioeconomic groups in European welfare states, Finland included, in order to support the social and economic integration of the immigrants and their children. There is however lacking evidence about the validity of this assumption especially from cities in the European welfare state context where the levels of ethnic segregation are rather modest. (Musterd, 2003, p. 624 - 629.)

A study by Musterd (2003) investigates the relationship between the neighbourhood environment and the integration of immigrants and their children in Dutch cities. The neighbourhood environment is here measured with the segregation index indicating the level of concentration of an ethnic group and the share of the low-income population in a neighbourhood. The results of this study show that people who live in a similar type of neighbourhood environment in terms of segregation do not possess similar levels of integration. The neighbourhood's level of segregation does not have a clear effect on its inhabitants' social mobility, political participation, and participation in housing markets. The relation between socioeconomic factors and the neighbourhood environment is important in the case of first-generation immigrants living in segregated areas but not in the case of the second nor the third generation. According to Musterd, the second and third generation is succeeding better in terms of

education and employment compared to the first generation in the same type of neighbourhood. As a conclusion, this study questions the direct relationship between integration and spatial segregation. The study does not claim that social inequality would have no impact on segregation; inequality in income and ethnic relations are important factors in understanding the urban structure. However, the clusters of ethnic minorities and disadvantaged socioeconomic groups do not explain the social, economic and political integration of immigrants and their descendants. In a European welfare state, education and labour market show more importance in explaining integration than the neighbourhood environment. (Musterd, 2003.)

4. Data and methods

This chapter describes the data and methods used in the study. The empirical analysis is divided into two parts; description and statistical modelling of the home-leaving patterns. The latter part evaluates the impact of demographic and socioeconomic factors and their importance in explaining the possible differences noticed in the descriptive analysis. All analysis is conducted by using the R-software. The programme used in cartographic visualizations is QGIS.

4.1. Data description

This study uses mainly register-based data combining yearly information about the complete population in Finland and their housing from 1999 to 2015. The data is produced by Statistics Finland and it is provided for this study by the Urbanization, Mobilities and Immigration (URMI) project at the National Institute for Health and Welfare (permission number: TK-53-356-16). The main unit of analysis is a person year and each person is assigned a pseudonymised identity code.

The data includes those individuals who could have been followed since age 16 in Helsinki, Turku and Tampere regions. The oldest possible observation age for an individual is thus 32. In order to be included in the analysis, the person must have been residing at his or her parental home at age 16 as a child. The individuals who died during the observation period are also completely excluded from the analysis. There is only a little missingness in the register data. The individuals without information about the country of origin and the observation years with missing information about the household, address or postal code are also removed from the analysis. The delimitations are applied in order to

ensure that the study population are all potential home-leavers. After the delimitations, there are 3 216 211 person years for 374 931 individuals included in the study.

Postal code areas are used as the operational definition for a neighbourhood in this study. This is the smallest geographical unit available in the data for all municipalities. The postal code areas are standardized using the division of 2015 through the study. The borders for postal code areas in geographical visualizations are open data from Statistics Finland (2015b). Postal code areas with less than 10 inhabitants are excluded from the analysis. Compared to previous research, this threshold for excluding a postal code area is low. Earlier research on ethnic segregation has utilized a minimum of 300 for example (e.g., Vilkama, 2006). A low number of inhabitants in calculating segregation measures would result in extreme and misleading values. However, as the study population is young, and especially in the case of the population with an immigrant background, the majority is moving from and to more urbanized areas. The preliminary descriptive analysis was also tested for the sensitivity for an alternative minimum number of inhabitants for postal code areas. Since the results of this sensitivity test did not show significant differences for the alternative exclusion criteria, the threshold of 10 inhabitants was maintained in the analysis.

The study is limited to the home-leaving patterns in Helsinki, Tampere and Turku regions ("seutukunta" in Finnish) the borders of which are defined based on former NUTS 4-classification. The municipalities in these regions are connected to each other by active political and economic cooperation and commuting. The regions form geographical entities considered to be large enough to capture the intra-regional residential mobility. The similarities between the regions allow the comparison of the results. Population-wise, these three regions are the largest ones in Finland, they are all located in the south of Finland and they are all hosting major universities. (Statistics Finland, 2015b.) There are however some differences between the regions which must be taken into account in the analysis; as the capital city of Finland, Helsinki has a distinct position compared to Turku and Tampere.

4.2. Population: immigrant generation and (parental) country of origin

Individuals who are born in Finland are here distinguished into those with native-born parents, i.e., native-born Finns, and those with immigrant parents, i.e., second generation. The individuals who are born outside Finland for foreign-born parents are classified as immigrants. Around 12 per cent of the study population has an immigrant background. A majority (79 per cent) of the second generation in this study is from the Helsinki region.

In the case of the native-born population, the country of origin is here defined by the parental country of birth by prioritizing the foreign-born parent and then the mother. For the first-generation immigrants, the country of origin is defined based on their own country of birth. The countries are grouped into five categories [3]; other Western countries, Eastern Europe, Western Asia and North Africa, sub-Saharan Africa, and other Asia. By grouping the countries into these larger categories, the sufficient sample sizes are ensured while still allowing the comparison of population groups.

Table 1. Data summary: study population by region (1999–2015)

	Region			
(Parental*) country of origin	Helsinki	Turku	Tampere	Total
Finland	223 915	50 630	61 652	336 197
Second-generation: total	*17 074*	*2 445*	*2 220*	*21 739*
Other Western countries	6 031	1 044	1 155	8 230
East Europe	4 156	621	442	5 219
West Asia and North Africa	2 600	371	331	3 302
Sub-Saharan Africa	2 307	168	109	2 584
Other Asia	1 980	241	183	2 404
First-generation: total	*12 690*	*2 543*	*1 762*	*16 995*
Other Western countries	1 020	169	162	1 351
East Europe	6 583	1 140	734	8 457
West Asia and North Africa	1 801	803	571	3 175
Sub-Saharan Africa	1 871	234	137	2 242
Other Asia	1 415	197	158	1 770
Total	253 679	55 618	65 634	374 931

* Prioritizing the foreign-born parent

Table 1 summarises the study population by region, immigrant generation and (parental) country of origin. A majority of the second generation have a Western background which must be taken into account in the analysis and in the interpretation of the results if the parental country of origin is not yet identified. The countries represented in each category reflect the past immigration waves in Finland. The largest countries represented in each category are Sweden (37 per cent) in other Western

countries, Russia (52 per cent) in Eastern Europe, Iraq (22 per cent) and Turkey (17 per cent) in Western Asia and North Africa, Somalia (64 per cent) in sub-Saharan Africa, and Vietnam (30 per cent) in other Asia.

Referring to Rumbaut's classification (see chapter 2.3), the second generation here includes also the 2.5-generation ("mixed") while the first-generation immigrants are in fact belonging to the 1.25-1.75-generations. The person must have been already living in Finland at the beginning of the follow-up at age 16 so the first-generation immigrants in Rumbaut's categorization are technically excluded in by the study design. Table 2 shows the distribution of the second generation by the decimal generations and parental country of origin. The majority of the second generation with a Western background belongs to the 2.5-generation (98 per cent) while the second generation with a sub-Saharan background has the lowest share of mixed parents (40 per cent).

Table 2. Data summary: the second generation by parental country of origin (%) in Helsinki, Tampere and Turku regions (1999–2015)

	Immigrant generation		
(Parental*) country of origin*	2nd	2.5 ("mixed")	Total
Other Western countries	3.0	97.0	100
East Europe	41.1	58.9	100
West Asia and North Africa	26.4	73.6	100
Sub-Saharan Africa	59.8	40.2	100
Other Asia	46.1	54.0	100
Total	27.2	72,8	100
N	5 916	15 823	21 739

* Prioritizing the foreign-born parent

4.3. Variables

The study utilizes three outcome variables; one to measure both the timing of the home-leaving event in general and two for the different destination neighbourhood types. The global event of home-leaving is identified based the change of the information of family status from a child (i.e., living in parental household) to something else between two consecutive years of measurement and the simultaneous change in the apartment information.

A censoring variable is introduced in cases where the home-leaving event cannot be observed in the analysis. Basic background variables are chosen based on the longitudinal nature of the data and on the relations observed in previous research. These include temporal variables, age in years and period in the calendar year, and demographic attributes which are binary gender and region. The main

predictors in answering the research questions in this study include immigrant generation and (parental) country of origin, and personal and parental socioeconomic attributes. The variables include both time-varying and time-invariant variables which are further described in chapter 4.3.2. All variables included in the analysis are described in Table 3.

Table 3. Summary of variables

Variable	**Description**
Home-leaving: total	1 = home-leaving 0 = home-leaving is not observed
Home-leaving: concentration	1 = person moves to a concentration (over-representation of inhabitants with an immigrant background) 0 = home-leaving to a concentration is not observed
Home-leaving: non-concentration	1 = person moves to a non-concentration (neutral or under-representation of inhabitants with an immigrant background) 0 = home-leaving to a non-concentration is not observed
Censoring	1 = the person is not at the risk of home-leaving 0 = the person is at the risk of home-leaving
Age (ordinal)	1 = age 16 – 17 (reference) 2 = age 18 – 19 3 = age 20 – 21 3 = age 20 – 21 4 = age 22 – 23 5 = age 24 – 25 6 = age 26 – 27 7 = age 28 – 29 8 = age 30 – 32
Period (ordinal)	1 = year 1999 – 2001 (reference) 2 = year 2002 – 2003 3 = year 2004 – 2005 4 = year 2006 – 2007 5 = year 2008 – 2009 6 = year 2010 – 2011 7 = year 2012 – 2013 8 = year 2014 - 2015
Gender	1 = male 0 = female
Region (categorical)	1 = Helsinki (reference) 2 = Turku 3 = Tampere

(Parental) country of origin (categorical)	For individuals with an immigrant background only 1 = other Western countries 2 = East Europe 3 = West Asia and North Africa 4 = sub-Saharan Africa 5 = other Asia
Main type of activity (categorical)	Based on the main type of activity during the year 1 = student (reference) 2 = employed 3 = unemployed 4 = other
Personal income (ordinal)	Deciles for individuals based on the total personal taxable income in state taxation 1 = the lowest income decile (reference) 10 = the highest income decile 0 = no income
Parental household income (ordinal)	Deciles for the household at age 16 based on the taxable income of the household 1 = the lowest income decile (reference) 10 = the highest income decile
Parental neighbourhood type	The level of immigrant concentration (LQ) 1 = over-representation (reference) 2= neutral 3 = under-representation

4.3.1. Defining the neighbourhood types

On the foundation of the theories for spatial integration, there is an aim to understand the residential mobility in terms of proximity of individuals with an immigrant background. The measure of Location Quotient (LQ) is introduced to indicate the local level of geographical concentration of inhabitants with an immigrant background and the neighbourhoods are categorized based on the value they obtain in this measure. Here, the LQ measures the relative concentration of inhabitants with an immigrant background in a postal code area. Unlike the traditional global measures of segregation, such as the Dissimilarity Index, or a fixed percentage threshold for the share of a population group, the LQ allows taking into account the regional and annual demographic uniqueness by comparing the local demographic composition to the regional one on a year of measurement (Brown & Chung, 2006). Besides, the share of immigrants and their descendants in Helsinki, Tampere and Turku regions has been increasing rapidly during the study period alongside with the increase of

international immigration in Finland and hence, making the usage of a fixed percentage threshold difficult in this study.

The LQ for an area *i* on a year *t* is formulated as

$$LQ_{it} = \frac{j_{it}}{p_{it}} / \frac{J_{rt}}{P_{rt}}$$

where *j* is the number of the local population with an immigrant background and *p* is the number of the total population in the postal code area. *J* refers to the total number of population with an immigrant background in the region *r* and *P* is the total population for the region. (Brown & Chung, 2006)

Figure 4. Average Location Quotient (LQ) for the study population by immigrant generation in Helsinki, Tampere and Turku regions (1999–2015)

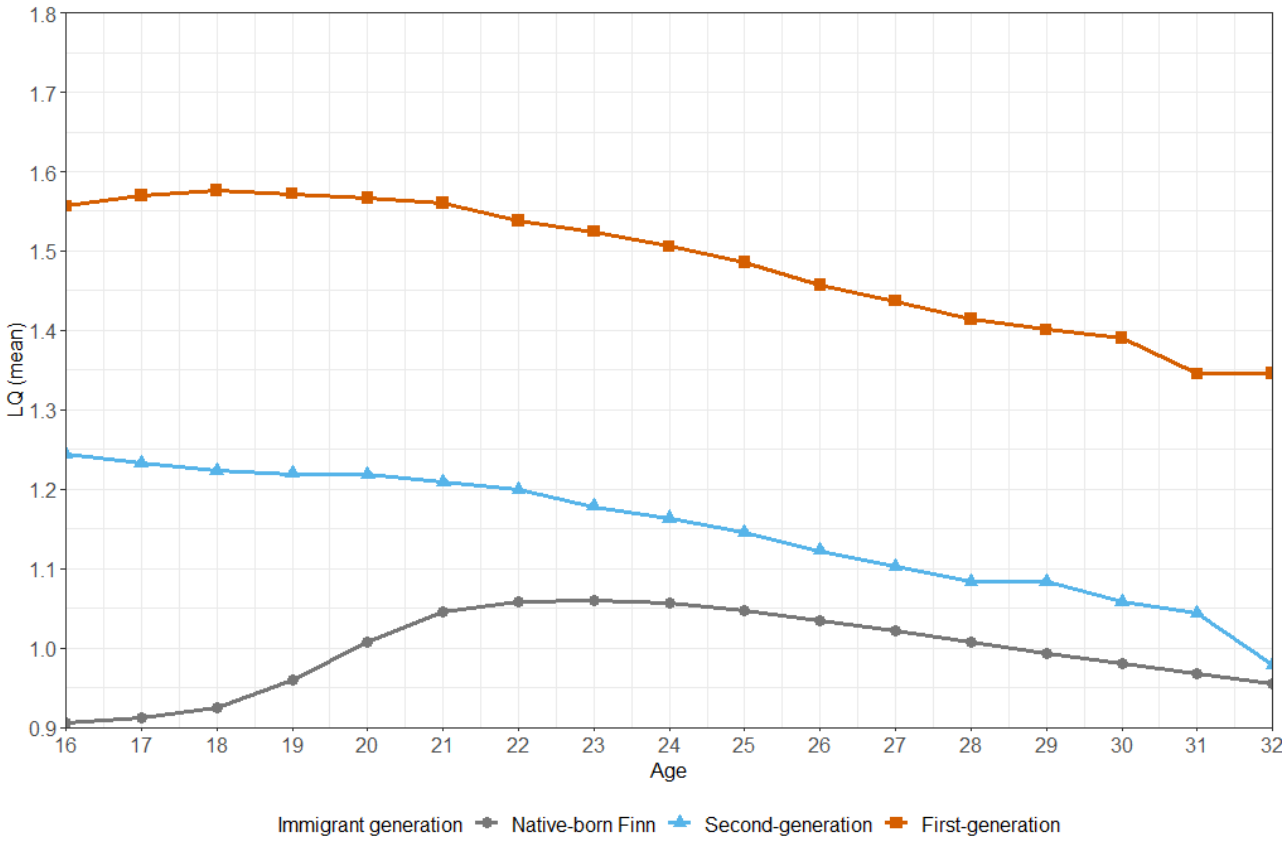


Figure 4 visualizes the average level of concentration (LQ) of inhabitants with an immigrant background in the neighbourhood for the whole study population by age and immigrant generation. This visualization utilizes all observation years and it does not yet take into account the home-leaving event nor the differences in the length of follow-up years. The figure also treats the LQ as a continuous measure.

As a general remark on Figure 4, the native-born Finns tend to live in areas with an under-representation or neutral level of concentration of population with an immigrant background, as the plot is placed on close to and on both sides of LQ = 1. This plot also peaks at age 22 to age 24 after which it starts ascending, suggesting that for the native-born Finns, living in areas with a relatively high level of concentration is more likely in those ages. The plots for the first-generation immigrants and the second generation start at a higher level of concentration but their direction is generally descending, especially starting from the average age of home-leaving. These curves are thus possibly suggesting that the native-born Finns and the youth with an immigrant background are approaching each other's neighbourhood types after leaving their parental homes. The level of concentration for immigrants remains constantly higher than for the second generation and the native-born Finns. The plots distinguishing the second- and first-generation by (parental) country of origin are presented in Appendices 1 and 2.

The outcome variables indicating the neighbourhood type are formed based on the measure of Location Quotient. The neighbourhood types are then further categorized based as

Neighbourhood type
- Over-represententation ($LQ_{it} > 1.2$)
- Neutral ($0.8 < LQ_{it} \leq 1.2$)
- Under-representation ($LQ_{it} \leq 0.8$).

The LQ can theoretically obtain values between 0 and ∞. The closer the LQ is to 1, the better the local share of the population with an immigrant background corresponds to the regional average. (Brown & Chung, 2006.)

For the analysis of the home-leaving events, two binary outcome variables are created to distinguish the destination neighbourhoods. The outcome variables are based on the preceding year's LQ for a neighbourhood in order to ensure that the home-leaver has not yet had an impact on the demographic composition of the destination neighbourhood. The first outcome variable "home-leaving: concentration" indicates a home-leaving event to a neighbourhood type with an over-representation. This variable obtains the value 1 if the person moves to this type of neighbourhood and 0 if not. Similarly, the other outcome variable "home-leaving: non-concentration" indicates a home-leaving event to a neighbourhood with a neutral or under-representation of inhabitants with an immigrant background. As follows, the two outcome variables are mutually exclusive meaning that the destination neighbourhood types are competing types for the home-leaving; one cannot move to both

types of neighbourhood and the occurrence of one event type will also remove the person from the population at risk in both analyses (e.g., Allison, 1982; Singer & Willett, 2003).

The thresholds values of the LQ in defining the neighbourhood type categories and the cut-point for the outcome variables were chosen based on two remarks. Firstly, these values correspond roughly to the one standard deviation distance from the LQ = 1 and the same values have been used in the previous studies on spatial segregation (e.g., Brown & Chung, 2006). Secondly, the threshold of 1.2 in distinguishing the home-leaving events into two outcome types is based on testing with several cut-points. The point was chosen based on its ability to capture the difference in the level of concentration between postal code areas. The actual percentage share of the population with an immigrant background in a neighbourhood per measurement year was reflected in choosing the cut-point. The threshold must be high enough to identify the real concentrations and it is set in a point where there is a relatively little variation on both sides of the point. Sensitivity tests were conducted with alternative cut-points, LQ of 1 and 1.5, for the descriptive analysis. Based on these tests, a cut-point of LQ = 1.5 would have been too high especially for Turku and Tampere regions and the earliest years of observation. There would have been very few areas categorized as concentrations and the size of the study population in those areas would have been small. On the other hand, the cut-point of LQ = 1 would have resulted in categorizing a large number of neighbourhoods as concentrations when these areas did not correspond to the previous research of segregation in these regions. The threshold of LQ = 1.2 is thus both significant in answering the research questions and allows statistical analysis with the available data.

Table 4 summarises the local reality behind the neighbourhood types. The table shows the number of inhabitants in the neighbourhood type and the average percentage share of inhabitants with an immigrant background, including the second generation, by region and measurement year. Helsinki and Turku regions have a high share of their total population living in concentration (in 2015; 31 per cent in Helsinki and 27 per cent in Turku) while the corresponding share is lower in Tampere (22 %). This suggests that the neighbourhoods identified as concentrations are more populous in Helsinki and Turku than in Tampere. When comparing the difference of the average share of inhabitants with an immigrant background between the two neighbourhood types, it seems that the neighbourhoods in Helsinki and Turku regions are the most strongly differentiated compared to Tampere; the difference between the neighbourhood types in these regions were 19 percentage points in 2015 for example while in Tampere the respective difference was only 11 percentage points. However, the difference between the neighbourhood type appears stronger in Turku than in Helsinki when taking into account

that the overall share of the population with an immigrant background in the region is lower in Turku than Helsinki. The strong ethnic segregation of neighbourhoods in Turku has been also observed in previous research (Saikkonen, Hannikainen, Kauppinen, Rasinkangas, & Vaalavuo, 2018, p. 49-51).

Overall, the share of inhabitants with an immigrant background has been increasing in all three regions through the study period but the levels of concentration remain rather modest despite the broad definition of clusters, including both immigrants and the second generation. The inhabitants with an immigrant background remain a clear minority in all the neighbourhoods in the study. The neighbourhood types by region are visualized in Appendices 3a–c.

Table 4. Data summary: neighbourhood types in Helsinki, Tampere and Turku regions (1999–2015)

	Non-concentration (LQ < 1,2)						Concentration (LQ > 1,2)						All					
	Helsinki		Turku		Tampere		Helsinki		Turku		Tampere		Helsinki		Turku		Tampere	
Year	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)	Inhabitants (total)	*j* (%)
1999	887	2.7	221	1.4	249	1.0	341	11.4	63	15.6	70	11.8	1 228	4.0	284	2.9	320	2.2
2000	878	2.9	211	1.4	247	1.1	364	11.7	74	15.2	76	13.3	1 242	4.1	285	3.4	324	2.3
2001	884	3.0	215	1.5	253	1.2	373	12.0	73	16.5	75	12.3	1 257	4.4	288	3.6	328	2.5
2002	891	3.3	217	1.7	268	1.3	377	12.6	73	15.6	65	13.1	1 268	4.7	290	3.7	332	2.6
2003	901	3.5	219	1.6	262	1.5	377	13.7	73	14.7	73	13.8	1 278	5.0	292	3.4	335	2.7
2004	906	3.6	220	1.8	256	1.6	381	13.9	72	15.1	83	14.1	1 287	5.2	293	3.6	340	2.9
2005	921	3.9	222	1.9	271	1.7	379	14.2	72	17.1	74	14.9	1 300	5.6	294	3.9	344	3.0
2006	945	4.3	225	2.0	267	1.7	369	16.2	71	17.5	82	14.7	1 314	6.1	296	4.1	350	3.1
2007	938	4.6	226	2.1	287	1.9	390	15.6	71	18.0	68	17.7	1 329	6.2	298	4.2	354	3.4
2008	949	4.8	229	2.2	290	2.1	397	17.3	71	19.0	68	19.0	1 345	6.7	299	4.3	359	3.5
2009	956	5.1	229	2.2	294	2.2	404	18.7	72	19.5	69	19.0	1 360	7.2	301	4.3	363	4.0
2010	946	5.3	232	2.5	296	2.2	428	19.2	71	20.8	71	12.8	1 374	7.5	303	4.6	366	3.2
2011	966	5.8	233	2.5	298	2.3	422	20.1	72	20.5	72	13.9	1 389	7.9	305	4.8	370	3.2
2012	964	6.2	235	2.7	302	2.4	443	21.2	72	20.8	72	14.7	1 407	8.5	307	5.1	374	3.3
2013	990	6.7	238	3.0	300	2.5	434	22.6	72	21.8	79	15.5	1 424	9.2	310	5.7	379	3.5
2014	1 002	7.1	228	3.1	295	2.6	440	23.8	84	20.4	88	14.2	1 441	9.6	312	5.7	383	3.5
2015	1 003	7.6	230	3.3	299	2.8	455	26.4	84	22.6	87	14.0	1 458	10.5	314	6.4	386	3.8

Note: Inhabitants (total) in thousands

j (%) = the average percentage share of inhabitants with an immigrant background (including the second generation) in a postal code area

4.3.2. Predictors: demographic and socioeconomic factors

The predictors for this study were selected based on the relations assumed by the theories on spatial integration and the results of earlier empirical research. The register-based data includes a large selection of possible variables indicating personal and parental attributes. The ones considered unimportant for the home-leaving event and the residential mobility of young adults based on the literature review were excluded from the analysis. In some attributes, such as parental neighbourhood and income, several alternative measures were tested before selecting the best-fitting predictor for the statistical models.

The longitudinal data allows the usage of two types of predictors in terms of measurement time. First, there are time-independent predictors which maintain the same value over time. Secondly, there are time-dependent variables which obtain different values over time. (Singer & Willett, 2003, p. 21, 159-160.) The distributions of the categorical and the means of continuous explanatory variables are expressed in Table 5a for time-independent variables by individuals and Table 5b for time-dependent variables by person year.

The study population is distinguished by immigrant generation and by personal or parental country of origin. These categories are described in detail in chapter 4.2. The variable for immigrant generation uses the native-born with native-born parents ("native-born Finn") as the reference group for the first-generation immigrants and the second generation. The possible third and further generations of descendants of immigrants would be thus categorized as native-born Finns. The study population is also distinguished by their country of origin. The Western countries of origin (other than Finland) is used as a reference group because they form the largest group in the study population after the native-born Finns and previous studies have noticed the resemblance of their residential mobility patterns to the native-born population.

The classic assimilation theory assumes that the differences in residential mobility patterns between the native-born and immigrant population are results of socioeconomic and demographic differences between these groups. To test this assumption, the analyses using both personal and parental socioeconomic attributes as predictors.

The indicators for personal socioeconomic status include income and main type of activity. Different alternative scales of measurement for personal income, such as deciles and natural log, were tested with a single-predictor analysis. The income deciles were chosen for the final statistical models because of its stronger predictive power compared to the tested alternative scales based on the higher

Nagelkerke R^2 and lower AIC value in the single-predictor analysis. The yearly limits for the personal income deciles were calculated from complete population data of individuals at age 18 to 24 in Finland. The missing values in personal income are assumed to be related to the young age of the study population in general. The missing values in the personal income variable are thus interpreted as no income at all and they are given the value of 0. The majority of the person years belong to the lowest income deciles in all population groups.

The personal main type of activity is indicated with a categorical variable based on the longest type of activity during the year. The majority of the study population, and especially the second generation, were students through the follow-up period. The other categories for the type of activity are "employed", "unemployed", and "other". The latter category indicates other reasons for being outside the labour force, such as being in (unemployment) pension, or in military or civilian service.

The personal income and main type of activity are measured in the actual year which poses a challenge since the event is measured at the same time period as the predictor. If the aim would be ensuring that the home-leaving does not impact the income level and main type of activity, the socioeconomic predictors would have been measured in the year preceding the move, as done in the study by Skovgaard Nielsen (2016). However, this study is however delimited to intra-regional residential mobility where the moves are less likely predicting the change of socioeconomic status compared to a change of the region. In addition, the choice of measurement time of the predictors is constrained by the nature of the home-leaving event; multiple transitions occur during the same life-stage, i.e., young adulthood, rapidly which makes it challenging to identify the exact order of events especially because of the thick time intervals in the data. As a consequence, there must be cautiousness in interpreting the direction of the effect between the personal socioeconomic attributes and the event of home-leaving in this study, especially in the analysis on the destination neighbourhood types.

The indicators for parental socioeconomic status include the household income and the neighbourhood of origin. The parental household income is defined as the household income measure at the beginning of the follow-up at age 16. The majority of young adults does not have any or only very little of personal income at that age and in this study, they were also in a position of a child in the household at age 16. The income of the sibling in the same household might still have an effect on this variable.

Different alternative scales of measurement for parental income, such as deciles and natural log, were tested with a single-predictor analysis. The income deciles were chosen for the final statistical models because of its stronger predictive power compared to the tested alternative scales based on the higher pseudo R^2 (Nagelkerke) and lower AIC value in the single-predictor analysis. The deciles for each year are calculated from the income of all households in Finland.

The parental neighbourhood type is defined based on the LQ of the postal code area where the person was last residing with a family status as a child during the year preceding the home-leaving. The categorization of this variable follows the criteria of distinguishing the parental neighbourhoods into three types (over-representation, neutral, under-representation) based on their level of concentration of inhabitants with an immigrant background.

Alternative variables for the parental neighbourhood type were also tested with a single-predictor analysis before choosing the one with the best explanatory power for the final statistical models. The alternative indicators for parental neighbourhood type were the continuous Location Quotient and by adding the square of the Location Quotient to the original variable. The latter tests a non-linear relationship between the predictor and the outcome variables. These alternative variables were finally rejected based on the comparison of the goodness-of-fit statistics.

The age in years forms the key indicator for the time and it has a fundamental role in indicating the age-related changes in the individual's residential mobility patterns and in the predicting variables. The variable for age in years distinguishes the study population into synthetic cohorts in which the follow-ups start in different calendar years. The other background variables included in the study mostly as control variables are the period of measurement in calendar years, binary gender, and region. The gender and region are measured at the beginning of the follow-up and they are treated as time-independent variables. The period is measured in the actual year.

While the age in years is a fundamental predictor, it is treated as an indirect indicator for the individual's life-stage (e.g., family status, work, studies). This means that the biological age is not per se a predictor for the ability for residential mobility. (see Champion et al., 1998, p. 66.)

The correlation between the predictors was tested with a correlation matrix for the continuous and ordinal variables, and with cross-tabulation and the chi-square test for the categorical variables. Except for the age in years, which is expected, the assumption of independence between the predictors is supported by these tests. The strongest correlation is observed between household income and

parental neighbourhood type (r = -0.19) implying that a higher parental income is associated with a lower concentration of inhabitants with an immigrant background in the neighbourhood of origin.

Table 5a. Distribution (%) of the time-independent predictors by (parental) country of origin and immigrant generation

	Finland	Other Western countries		East Europe		West Asia and North Africa		Sub-Saharan Africa		Other Asia	
		2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st
Gender											
Male	51.0	52.2	52.7	51.7	51.1	52.9	52.9	49.9	52.9	51.2	48.9
Female	49.0	47.8	47.3	48.3	48.9	47.1	47.1	50.1	47.1	48.8	51.1
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Parental household income											
1st decile	1.8	3.3	12.9	8.5	11.9	9.2	19.9	11.2	22.7	7.9	11.1
2nd decile	1.9	2.9	5.0	6.3	8.1	7.7	15.3	13.0	18.8	8.7	8.4
3rd decile	2.7	4.3	7.7	8.0	14.0	11.0	29.1	14.0	24.3	8.3	11.4
4th decile	4.6	5.6	6.7	8.2	9.9	10.8	13.1	11.8	13.2	8.4	9.5
5th decile	5.9	6.9	5.9	8.0	8.2	10.8	6.5	11.6	7.1	8.9	9.3
6th decile	6.7	7.8	7.4	7.7	9.4	10.7	5.8	9.7	4.3	9.0	8.4
7th decile	8.4	9.3	8.1	9.8	11.0	9.8	3.4	8.4	3.8	10.5	10.2
8th decile	12.6	11.9	10.2	11.8	10.7	9.6	2.6	7.7	2.6	12.5	10.2
9th decile	20.1	16.5	11.1	14.7	9.6	10.1	2.1	6.5	2.1	11.6	11.1
10th decile	35.2	31.4	25.0	17.0	7.1	10.3	2.2	6.2	1.2	14.0	10.6
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
N (person)	336 197	8 230	1 351	5 219	8 457	3 302	3 175	2 584	2 242	2 404	1 770

Table 5b. Distribution (%) of the time-dependent predictors by (parental) country of origin and immigrant generation

	Finland	Other Western countries		East Europe		West Asia and North Africa		Sub-Saharan Africa		Other Asia	
		2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st
Age											
16-17	39.3	42.6	43.6	45.6	40.9	46.3	43.1	51.2	46.2	43.7	42.0
18-19	32.2	31.9	30.3	31.2	30.2	31.1	30.8	31.5	30.4	30.9	29.5
20-21	18.1	16.5	15.4	15.2	15.6	14.9	15.2	12.8	13.4	15.4	15.4
22-23	6.6	5.8	6.2	5.2	7.3	5.3	6.4	3.3	5.8	6.0	7.2
24-25	2.4	1.9	2.6	1.8	3.5	1.6	2.8	0.9	2.6	2.3	3.3
26-27	0.9	0.8	1.2	0.6	1.5	0.5	1.0	0.2	1.1	1.1	1.5
28-29	0.4	0.3	0.4	0.2	0.7	0.2	0.5	0.1	0.4	0.5	0.8
30-32	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.1	0.2	0.3
Total	100	100	100	100	100	100	100	100	100	100	100

Period											
1999-2001	7.0	4.1	6.2	2.3	6.7	2.2	3.8	0.9	5.7	2.3	6.4
2002-2003	9.6	6.0	8.1	3.3	9.8	3.4	6.8	1.4	8.8	4.1	8.8
2004-2005	12.0	8.5	10.4	5.1	12.9	5.2	10.7	2.5	12.7	5.9	11.1
2006-2007	13.3	11.0	12.5	7.6	14.7	8.6	13.4	3.9	14.1	8.6	12.8
2008-2009	14.3	14.2	14.0	12.2	14.3	13.6	15.4	8.2	13.5	12.6	12.8
2010-2011	14.8	16.8	14.6	18.0	13.7	17.9	16.0	17.3	13.6	18.0	13.6
2012-2013	14.7	18.9	16.3	23.3	13.6	22.2	16.4	28.1	15.2	22.4	15.7
2014-2015	14.4	20.5	17.8	28.2	14.3	27.0	17.5	37.6	16.4	26.1	18.6
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Main type of activity											
Employed	26.2	21.8	17.5	20.4	25.3	19.1	16.3	12.2	13.8	22.0	23.0
Unemployed	1.8	1.4	1.4	1.7	2.7	2.2	3.7	1.7	3.8	1.8	1.9
Student	62.6	66.1	62.7	69.4	56.1	67.5	59.8	73.8	53.7	67.0	53.9
Other	9.4	10.7	18.4	8.4	15.9	11.2	20.2	12.3	28.7	9.3	21.2
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Parental neighbourhood											
Under-representation	53.9	43.9	40.7	29.7	17.3	23.2	14.1	16.2	6.3	26.7	20.6
Neutral	23.4	27.2	26.9	22.6	20.5	26.2	19.8	21.3	20.4	22.6	23.2
Over-representation	22.7	28.9	32.5	47.7	62.2	50.6	66.2	62.5	73.2	50.7	56.2
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Personal income											
1st decile	17.3	19.4	18.6	18.5	17.1	20.1	19.6	22.0	18.1	18.4	16.1
2nd decile	18.0	18.9	16.5	18.8	17.4	20.3	20.5	22.7	18.3	19.1	17.3
3rd decile	10.2	9.8	9.3	9.9	9.5	8.8	8.4	8.7	8.6	9.4	9.2
4th decile	8.3	7.6	6.2	7.6	7.3	6.8	6.3	5.4	6.3	7.2	6.9
5th decile	6.4	5.7	4.8	5.6	5.2	5.0	4.8	4.2	5.4	5.6	4.9
6th decile	5.8	4.9	3.7	4.7	4.8	4.1	4.2	3.6	4.4	5.4	4.8
7th decile	5.2	4.3	3.1	4.4	4.4	3.5	2.9	2.3	2.7	4.1	3.8
8th decile	4.6	3.7	3.4	3.7	3.7	3.0	2.6	2.1	2.2	3.9	3.7
9th decile	3.7	2.6	2.0	2.7	3.8	2.1	2.0	1.2	1.5	3.1	3.6
10th decile	2.9	1.7	1.5	1.6	3.4	1.4	1.4	0.4	1.2	2.9	2.8
No income or missing	17.5	21.5	30.9	22.5	23.3	24.8	27.4	27.4	31.3	21.0	27.0
Total	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
N (person year)	1 662 148	36 779	5 787	21 434	39 801	13 299	14 143	9 303	9 199	10 358	7 975

4.4. Research methods

Statistical methods for discrete-time event-history analysis were employed in order to empirically study the home-leaving event. These methods include life-tables for descriptive analysis and logistic regression in statistical modelling. They allow the analysis of the longitudinal data and they tackle the challenges related to censoring and time-dependent predictors which would be difficult using standard statistical procedures familiar from cross-sectional analysis (Allison, 1982, p. 62; Singer & Willett, 2003, p. 326).

The register-based data is recorded in one-year-units which can be considered as relatively "thick" time intervals. This thickness suggests that multiple individuals can experience the event during the same time interval resulting in highly tied data and computational problems. As a consequence, discrete-time methods are more appropriate for this study than continuous-time methods (Allison, 1982, p. 62-64; Singer & Willett, 2003, p. 63.)

Individuals remain in the study population until the event of home-leaving to either type of a neighbourhood, or censoring occurs. The proceeding observation years for an individual are simply removed after the event or one of the censoring criteria occurs because he or she is not considered to be in the population at risk anymore. The later person years are considered non-informative for the analysis (Singer & Willett, 2003, p. 316-319). In addition, the process of censoring allows the inclusion of those individuals who cannot be followed until the occurrence of the event but whose information is important to take into account in the analysis in order to avoid biases.

There are multiple reasons why observations are censored in this study design. The first obvious reason is the eventual end of the data collection in the year 2015. This also means that the individuals who reached age 16 in 2015 are not included in the analysis due to immediate censoring. Secondly, leaving the original region is also considered as a censoring criterion since the focus of the study is delimited to intra-regional residential mobility only. Since the neighbourhood types are categorized based on a local measure for concentrations (i.e. LQ), the intra-regional home-leaving events cannot be considered comparable to the inter-regional home-leaving events when studying the destination neighbourhoods. The change in the original region is observed when the regional code of a measurement year does not match the one observed at age 16. The person could have left the original region by moving abroad which is here observed in missing years between observations.

Censoring is always irreversible which means that when one of the censoring criteria occurs, the individual's following observation years will remain excluded from the further analysis even if he or she moves back to the parental home again or returns to the original region (Singer & Willett, 2003, p. 328). In addition to simplifying the study design, the irreversibility of censoring also improves the comparability of the events in the analysis.

The distribution of events and different types of censoring is expressed in Table 6. A clear majority of the observations among the second generation is censored (61 per cent) mainly because the follow-up ends before the home-leaving is observed due to their young age structure in general.

Table 6. Data summary: home-leaving and censoring of the study population in Helsinki, Tampere and Turku regions (1999–2015)

	Event	Censored				
(Parental*) country of origin	Home-leaving	Event is not observed	Left the region	Censored (total)	Censored (%)	Total
Finland	189 380	104 424	42 393	146 817	43.7	336 197
Second-generation: total	*8 354*	*11 519*	*1 866*	*13 385*	*61.6*	*21 739*
Other Western countries	3 757	3 586	887	4 473	54.3	8 230
East Europe	1 857	2 958	404	3 362	64.4	5 219
West Asia and North Africa	1 221	1 816	265	2 081	63.0	3 302
Sub-Saharan Africa	576	1 864	144	2 008	77.7	2 584
Other Asia	943	1 295	166	1 461	60.8	2 404
First-generation: total	*8 269*	*6 624*	*2 102*	*8 726*	*51.3*	*16 995*
Other Western countries	506	679	166	845	62.5	1 351
East Europe	4 633	2 915	909	3 824	45.2	8 457
West Asia and North Africa	1 401	1 318	456	1 774	55.9	3 175
Sub-Saharan Africa	925	918	399	1 317	58.7	2 242
Other Asia	804	794	172	966	54.6	1 770
Total	206 003	122 567	46 361	168 928	45.1	374 931

* Prioritizing the foreign-born parent

4.4.1. Descriptive analysis

The descriptive analysis aims to answer the research question (1) and it also guides in the development and interpretation of the statistical models later. Both numeric and graphic strategies are employed for descriptive purposes. The descriptive analysis serves as a preliminary analysis of the overall home-leaving patterns in terms of timing and destination neighbourhood types, and the differences

by immigrant generation and country of origin. No other predictors will be taken into account in the descriptive analysis.

In order to describe the timing on the global home-leaving event, simple life-tables are composed based on information about the population at risk (i.e. the number of individuals living at parental home and eligible to experience the event), event occurrence (i.e. the number of home-leavers), and censoring (i.e. the number of censored individuals) by age in years. The estimated survival probability until the given year is calculated as

$$\hat{S}(t_j) = \hat{S}(t_{j-1}) \left[1 - \hat{h}(t_j)\right]$$

where *j* is the given age in years and $\hat{h}$ is a hazard calculated simply by dividing the total number of home-leaving events at age *j* by the number of the population at risk during the age *j*. (Singer & Willett, 2003, p. 330-337.) The cumulative incidence for the given year is then calculated by subtracting the survival probability from 1.

These life-tables are computed first by immigrant generation and then by country of origin. The plots for cumulative probability for home-leaving are created to visualise the differences in the pace of the home-leaving event between population groups. Instead of calculating the mean or the median of the home-leaving age, as traditionally in cross-sectional analysis, the life-table method allows taking into account the effect of time and censoring.

The survivor function and cumulative incidence plots are suitable in describing the occurrence of the home-leaving event in general but it is not appropriate in the case where there are multiple types of outcomes, such as two destination neighbourhood types for the global event. The competing event types require a conditional reformulation of the probability. (Singer & Willett, 2003, p. 590.)

Competing-risk life-tables are computed in order to describe the differences in moving to either a concentration or non-concentration. These tables are similar to the general life-table but the numbers for the event occurrence and censoring are specific for the destination neighbourhood type. Instead of the survivor probability, the competing-risk life-tables are used to calculate the discrete-time hazards for each destination neighbourhood type. Hazard rate *h* is defined here as a non-cumulative risk of moving to a specific type of a neighbourhood *i* at age *t* in a condition that the person has not yet experienced home-leaving event nor the competing type of event (i.e. moved to another type of a neighbourhood), formulated as

$$h_{ti} = \Pr[\, T = t, I = i \mid T \geq t]$$

(Allison, 1982, p. 88). The higher the hazard rate, the greater the conditional probability of moving to the given destination neighbourhood type. The overall hazard for home-leaving can be obtained by summing the separate hazards for each destination neighbourhood types together (Allison, 1982, p. 88; Singer & Willett, 2003, 330-332). It is, however, easier to interpret the survivor rate instead of the hazard when studying the timing of the global home-leaving event.

Again, the summaries are computed first, by immigrant generation and then, by personal or parental country of origin. Finally, the hazard rates are plotted to compare the differences by neighbourhood types and population groups. The plots help to gain a "big picture" of the home-leaving patterns and they are used to identify the differences in the hazard of moving to either type of destination neighbourhood. In the descriptive analysis, the focus will be on the order of the competing-risk hazard plots, and the increases and decreases in the hazard rate, rather than the actual value of the hazard.

In the longitudinal analysis, the size of the population at risk tends to decrease towards the end of the maximum age because of event occurrence and censoring. In this study, the young age structure of the study population, especially among the ones with an immigrant background, causes variation and increases the standard error of the hazards especially towards the end of the follow-up. To avoid the interpretation of misleading estimated for a small population at risk, hazard estimates will not be plotted when the size of the population at risk drops under 100 people.

4.4.2. Logistic regression models

The statistical models are developed in order to answer the second research question. They are used to evaluate the impact of the socioeconomic and demographic attributes into the residential mobility patterns of the home-leavers in terms of timing and the destination neighbourhood type.

The logistic regression to estimate the hazard rate *h* for the home-leaving event for individual *j* at time *t* is expressed as

$$\text{logit}(h_{jt}) \;=\; \log\left(\frac{h_{jt}}{1 - h_{jt}}\right) = \alpha_t + \beta' x_{jt}$$

where α_t (t = 16, 17, .., 32) is a set of constants indicating age in years (Allison, 1982, p. 72). The time indicator constraints the intercept parameter and hence, making the baseline function flexible. The vector β' expresses the estimated regression coefficients and x_{jt} is the vector of predictors for individual j at time t (Allison, 1982, p. 72). The logit hazards are transformed into odds ratios in the final analysis for easier interpretation.

In addition to the logit hazard, the estimates are assessed based on their statistical significance (p-value) and the confidence interval for the odds ratios. The AIC and Nagelkerke's R^2 test statistics are also computed for the models in order to evaluate the goodness-of-fit of the models.

The effect of each predictor is first described by single-predictor binary logistic regression analysis where only the age-variable is adjusted. Three different multivariable logistic regression models are estimated. The predictors are added into the baseline model (i.e. age as the only predictor) in the following "steps":

1. Demographic attributes
2. Personal socioeconomic attributes
3. Parental socioeconomic attributes

The statistical models for each destination neighbourhood types are estimated separately by using individualized logistic regression analysis (Begg & Gray, 1984; Yang, 2017). This means that parallel, yet exclusive, regression models are estimated by using different binary outcome variables; one for home-leaving to a concentration, and another for home-leaving to a non-concentration. Compared to widely-used multinomial logistic regression, the individualized logistic regression method is more appropriate for this study. Unlike the multinomial models, individualized models allow the use of different censoring variables (Begg & Gray, 1984, p. 11). Moving to one type of destination neighbourhood removes the person from the population at risk in the competing event type.

Finally, the interaction between immigrant generation and the (parental) country of origin is tested for the population with an immigrant background by adding the interaction term to the complete models for the timing and destination neighbourhood types. If the interaction term is statistically significant and it improves the goodness-of-fit of the model, additional logistic regression models are estimated for the second generation only to evaluate the impact of the predictors in the residential mobility patterns within this population in specific.

4.5. Limitations of the study

The first limitation is related to the definition of a neighbourhood. Postal code areas are used to indicate the location and borders of a neighbourhood in this study, but there are some challenges is this definition. The definition is bounded by the data available for this study and the postal code areas are the smallest geographical unit for all municipalities in the data. Postal code areas are thus rather indicating the administrative borders for an area rather than a neighbourhood as a social community. The large postal code areas pose a challenge in measuring local concentrations of inhabitants with an immigrant background. The Location Quotients calculated for coarse geographical units might mask the heterogeneity within a postal code area. Large postal code areas are especially challenging in Tampere and Turku regions. For example, Hervanta in Tampere and Varissuo in Turku are large postal code areas containing drastically different types of neighbourhoods in terms of demographic composition (e.g., Saikkonen et al., 2018, p. 32). Yet, these postal code areas appear generally as concentrations in the analysis. However, a clear majority (68 per cent) of the study population is in Helsinki which reduces the effect of this challenge in the analysis.

Instead of large geographical concentrations, ethnic and socioeconomic segregation appears rather mosaic-like in Helsinki according to previous research. The reason for this is the long practice of social mixing in urban planning in Helsinki. These previous studies use 250 m times 250 m grids in defining a neighbourhood. However, the scattered and small concentrations of the population with an immigrant and/or disadvantaged socioeconomic background have also started to form larger clusters in the last decades. (e.g., Kortteinen & Vaattovaara, 2015.)

The small units of measurement can reveal local concentrations of specific demographic groups but since the concentrations are not necessarily located beside each other, the mosaic-like segregation does not always refer to systematic segregation in a city. Previous studies have also demonstrated that segregation measures for small spatial units inherently take into account the segregation on a larger scale (Duncan et al., 1961).

Different scales of ethnic segregation has been compared by Manley et al. (2019). Their study distinguishes spatial segregation into large scale segregation, suggesting the proximity of inhabitants from the same population groups, and small scale segregation, suggesting the propinquity of inhabitants from the same population groups. They employ a multi-scale modelling approach to study segregation in New Zealand. The study concludes that the patterns of segregation for most of the studied ethnic groups appear preferring proximity over propinquity which resulted in stronger

segregation on a large scale compared to the small scale. In addition, the study also suggests that different patterns of segregation apply to different population groups and hence, one fixed scale is insufficient in studying segregation. (Manley et al., 2019.)

Another limitation is related to the strong presence of students in the study due to the nature of the home-leaving event as a transition occurring in early adulthood. There is a strong representation of students in some neighbourhoods, especially in Turku and Tampere where earlier research has noticed spatial segregation being stronger for students than the rest of the population (Saikkonen et al., 2018, p. 55-56). The residential area hosting mainly students are characteristic for university-cities and as a result of the presence of international students, these areas tend to appear as immigrant concentrations. In addition of their residential location, students are also a distinct group in terms of socioeconomic status and thus, they are not often considered as equivalent to other population groups interesting for spatial segregation studies (e.g., Saikkonen et al., 2018, p.34). The effect of students in the segregation results is assumed to be less strong in Helsinki where the student housing is not strongly concentrated, with an exception of Otaniemi-campus area. However, a clear majority of the study population here are students through the observation window and thus, making their residential mobility patterns comparable to each other. In addition, the students are taken into account in the analysis by adjusting the main type of activity. Excluding the students from the study is not reasonable considering the nature of the home-leaving event and the exclusion would decrease the size of the study population critically. As a conclusion, the impact of the student status must be taken into account in the interpretation of the results since it might have an important effect on personal income, i.e. housing and student benefits, and ability to leave parental home in general.

The third limitation is related to the dichotomy in the outcome variables which risks being “arbitrary and wasteful of information” (Allison, 1982, p. 64). These challenges have been carefully considered by basing the cut-point of the outcome variables indicating the neighbourhood types with the measure of Location Quotient which takes its values flexibly based on time and regional context. Besides, the variation on both sides of different thresholds has been reflected before imposing the cutoff point for the final competing risk outcome variables.

Finally, methodological nationalism is a challenge in studies involving populations with an immigrant background, and characteristic for social sciences and integration policies in general. This refers to a tendency to assume the nation-state as a natural form for approaching the social and political realities in the contemporary world. (Wimmer & Glick Schiller, 2002.) This is also acknowledged as the fourth

challenge in this study where the countries of origin are categorized based on discrete nation-states and territorial borders which risks masking the heterogeneity within these geographical entities, for example in terms of class or ethnicity.

This study avoids using the concept of ethnicity in categorizing the study population even if the study deals with a phenomenon commonly referred to as ethnic segregation by the literature. There are multiple reasons for this choice. First, the Greek origin of the term "ethnicity" is "ethnos" or "ethnikos" used to describe the non-Hellenic population, the "other". In other words, the use of the word is often an act of an alternation of a population group. The use of the term also varies by the context. The Anglo-American-literature uses the term "ethnic" as an equivalent for minority groups or non-nationals living in a nation-state and their studies often collect information about the ethnicity of the respondents, while the European tradition uses the term to refer to a territorial descent and nationhood. (Malesevic, 2004, p. 1.) These definitions become problematic when studying the native-born population with an immigrant background because the term "ethnic" and "immigrant" are not interchangeable, e.g., the "native-born Finns" in this study include the local minority groups as well such as the Sami people, Finnish-Swedes, the Roma people, and possibly the third-generation of descendants of immigrants. Information about the nationality and mother tongue has been previously used in studies about ethnic segregation in Finland but they are problematic in identifying the individuals belonging to the second generation.

Information about the country of birth is available for all individuals in the data which is one of the main reasons for using the personal or parental country of origin as one key indicator for an individual's background. The categories in defining the country of origin here are a compromise between the information provided by the register-based data and the significance of the categories. On one hand, they are defined based on shared geographical, historical, political and cultural similarities of the countries. On the other hand, the definition of the categories is bounded by the need for sufficient population sizes and interpretability of the results.

5. Results

5.1. Timing of the home-leaving event

5.1.1. Description of the timing

The cumulative incidence plots (Figures 5a–c) describe the probability of home-leaving by age in years. The probabilities are plotted for each immigrant generation and country of origin separately in order to compare the differences in the timing of the first-time departure from the parental homes.

Overall, the second generation has a fairly similar pace of home-leaving compared to the native-born Finns (Figure 5a). The difference between the plots of the immigrants and the native-born Finns is more obvious than between the second generation and the native-born Finns. Based on the plots for native-born Finns and the second generation, the probability of home-leaving increases clearly until age 21–22 after which the increase is less pronounced and slower. For the immigrants, the probability of home-leaving increases rapidly until age 21, which is faster than for the other population groups, after which their pace of home-leaving slows down. After this rapid pace at the beginning, the risk of home-leaving increases slower for immigrants than for their second generation and native-born Finnish peers. This might suggest a large heterogeneity in the timing of the home-leaving event within the first-generation immigrants; there are those who leave very early and those who experience a delayed home-leaving.

When comparing the differences in the timing of the home-leaving event by parental country of origin within the second generation in Figure 5b, the plot for the home-leavers with a Western background resembles the one for the native-born Finns the most which suggest the similarity of the pace in leaving the parental home. The timing of the home-leaving event for the second generation with West Asian and North African country of origin is also similar to the one for native-born Finns. The second generation with parent(s) from sub-Saharan Africa has the slowest pace in home-leaving. When comparing the second generation to their immigrant peers with the same country of origin in Figure 5c, it appears that the second generation has a slower pace in leaving parental their parental home compared to the immigrants in Figure 5b.

Figure 5a. Cumulative probability of home-leaving

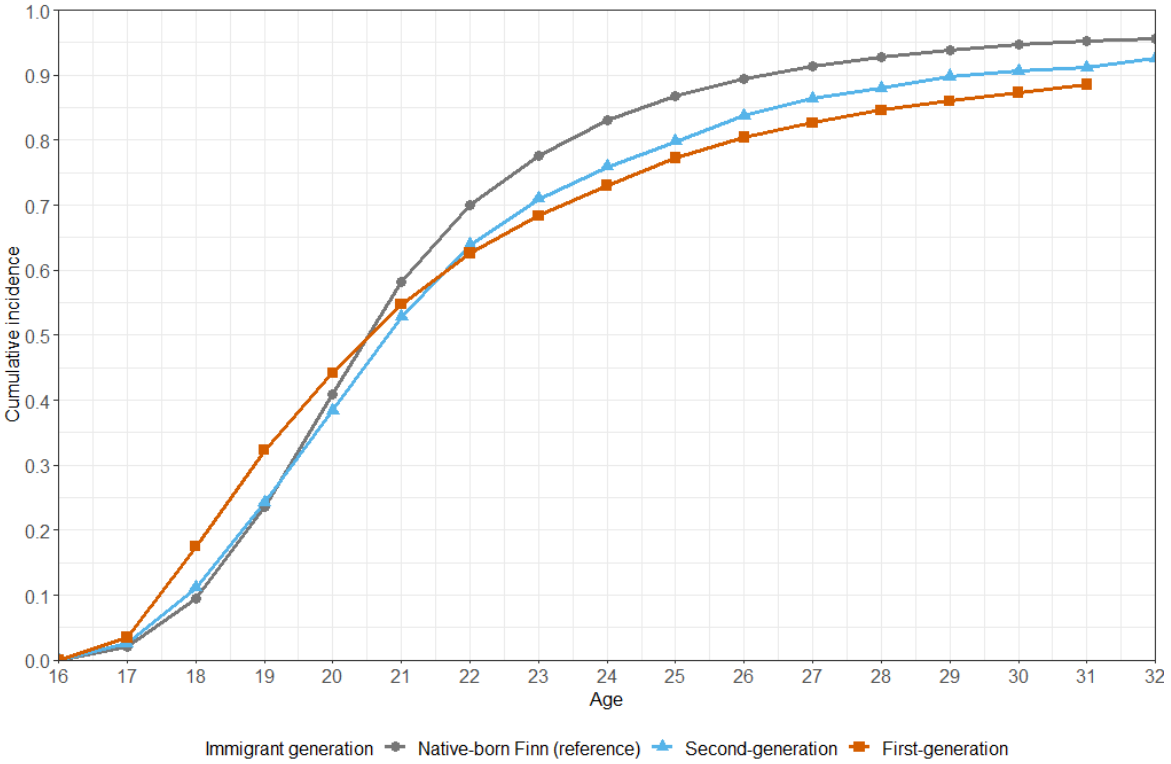


Figure 5b. Cumulative probability of home-leaving for the second generation

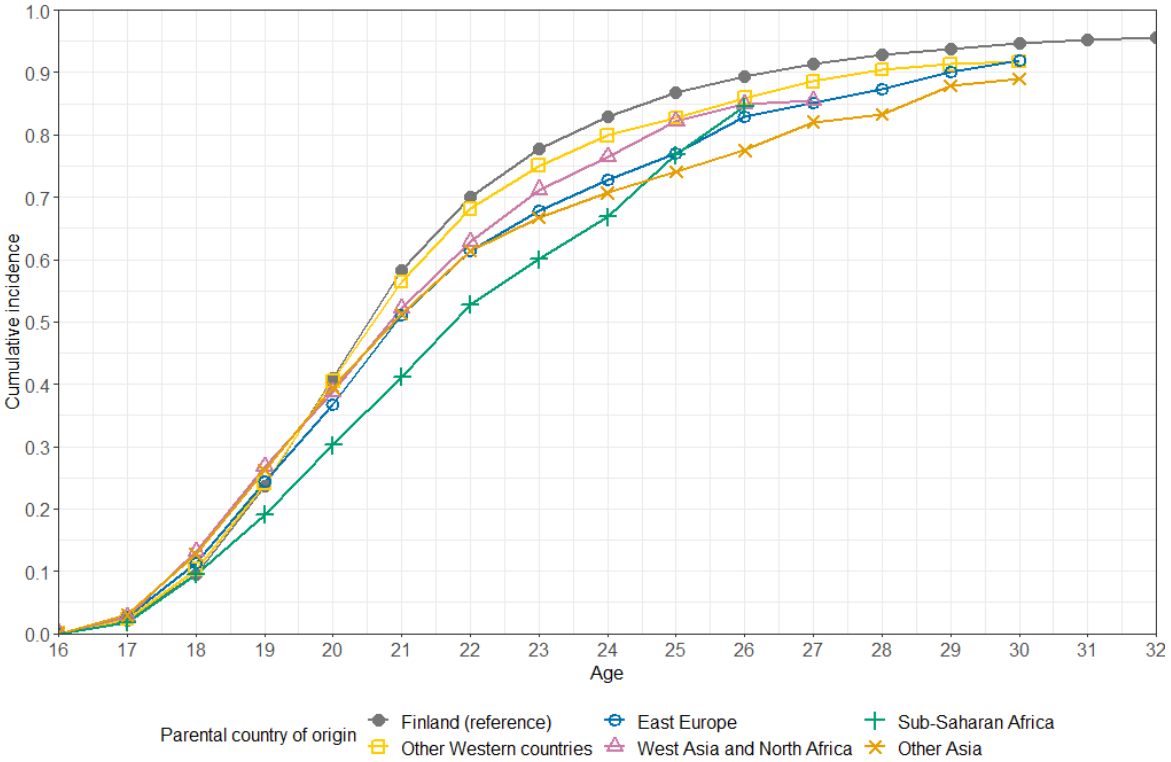
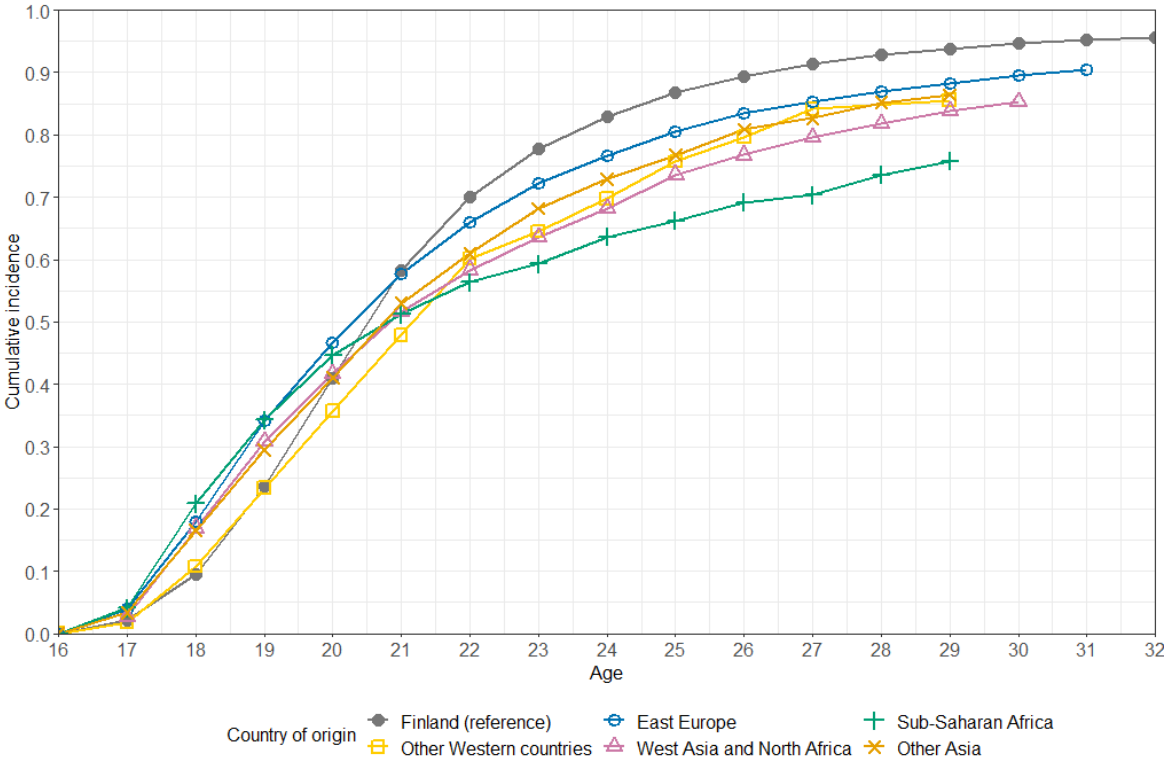


Figure 5c. Cumulative probability of home-leaving for the first generation



5.1.2. Regression models for the timing

The results of the logistic regression models for the global home-leaving event for the complete person-year data is expressed in Table 7a. In the single-predictor analysis, the first-generation immigrants are more likely to experience the home-leaving event compared to the native-born Finns and the second generation. In this preliminary model, the second generation is less likely to experience the home-leaving event during the observation year compared to the native-born Finns. After adjusting all predictors, the effect of the immigrant background compared to the native-born Finns reverses, suggesting a 10 per cent reduction in the odds of home-leaving for immigrants compared to the native-born. The estimate for the second generation is the closest to the reference category in the adjusted model where the odds for home-leaving are 8 per cent lower for the second generation compared to the native-born Finns. This gap, the delay in home-leaving, to the native-born Finns is, however, greater in the adjusted model than in the single-predictor model.

The highest odds of home-leaving are for ages 20–21 after adjusting all the other predictors in the analysis. The negative regression coefficients for the male gender in all models suggest a general delay of home-leaving for men. For them, the odds of home-leaving is 39 per cent lower than for

women when all other predictors are held constant. The home-leaving event is also experienced earlier in Turku and Tampere than in Helsinki. In both regions, the odds of home-leaving in the observation year are almost 20 per cent higher than in the Helsinki region.

When the other predictors are not yet taken into account in the analysis, employment seems to increase the odds of home-leaving compared to the students and the effect of employment is stronger than the effect of unemployment in the single-predictor analysis. However, personal income explains well the greater odds of home-leaving for the employed population. Adjusting the personal socioeconomic predictors in model 2 clearly reduces the effect size for the employed population. Unemployment suggests a 35 per cent increase in the odds of home-leaving compared to students after controlling all other predictors.

Increased personal income suggest greater odds of the home-leaving event on an observation year. The odds of home-leaving are 8-times higher for a person in the tenth income decile to leave from parental home compared to a person in the first decile after all other predictors are adjusted. Respectively, having no income suggests a 27 per cent reduction in the odds of home-leaving compared to having some income, i.e. the first income decile.

The parental income has an opposite effect on the timing of the home-leaving event; the higher the parental income, the lower the odds of home-leaving. Parental household income belonging to the tenth decile suggests almost a 50 per cent reduction in the odds of home-leaving compared to the first decile when all other predictors are adjusted. Only the difference between the first and second decile is statistically insignificant in the complete model.

Parental neighbourhood type has a very small but still statistically significant effect on the odds of the global home-leaving event. In the adjusted model, having lived in a neighbourhood with over-representation of inhabitants with an immigrant background suggest a 7 per cent increase in the odds of home-leaving compared to having lived in a non-concentration.

In order to evaluate the differences between countries of origin, another logistic regression analysis is conducted by excluding the native-born Finns from the logistic regression analysis, the results of which are presented in Table 7b. Generally, the results are similar than in the models for the complete population for most of the predictors but more information about the difference between the immigrant generation and countries of origin. The odds of leaving parental home during the given

observation year are 10 per cent smaller for the second generation compared to the first-generation immigrants after adjusting all other predictors.

The single-predictor analysis using the Western countries as a reference category for the countries of origin shows a statistically significant difference only for the Eastern European background. After adjusting all the other predictors, the odds of home-leaving are smaller for all groups in the countries of origin compared to the ones with a Western country of origin. The regression coefficients here are statistically significant for all countries of origin except sub-Saharan Africa. The other Asian background suggests the smallest odds of home-leaving compared to other groups in both the single-predictor and multivariate analysis. It suggests a 16 per cent decreased in the odds of home-leaving compared to the ones with a Western background after adjusting all other predictors.

Table 7a. Results of logistic regression analyses for the timing of the home-leaving event*

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.526	< 0.001	2.503	< 0.001	1.902	< 0.001	1.905	< 0.001	6.72	6.55 – 6.89
	20-21	3.556	< 0.001	3.564	< 0.001	2.569	< 0.001	2.589	< 0.001	13.32	12.97 – 13.68
	22-23	3.684	< 0.001	3.724	< 0.001	2.497	< 0.001	2.516	< 0.001	12.38	12.02 – 12.75
	24-25	3.489	< 0.001	3.525	< 0.001	2.246	< 0.001	2.259	< 0.001	9.57	9.24 – 9.92
	26-27	3.300	< 0.001	3.317	< 0.001	1.999	< 0.001	2.006	< 0.001	7.43	7.08 – 7.81
	28-29	3.093	< 0.001	3.067	< 0.001	1.728	< 0.001	1.727	< 0.001	5.62	5.22 – 6.07
	30-32	3.192	< 0.001	2.947	< 0.001	1.602	< 0.001	1.587	< 0.001	4.89	4.31 – 5.55
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.325	< 0.001	0.33	< 0.001	0.269	< 0.001	0.274	< 0.001	1.32	1.26 – 1.38
	2004-2005	0.434	< 0.001	0.448	< 0.001	0.399	< 0.001	0.405	< 0.001	1.50	1.44 – 1.57
	2006-2007	0.398	< 0.001	0.413	< 0.001	0.354	< 0.001	0.359	< 0.001	1.43	1.37 – 1.50
	2008-2009	0.393	< 0.001	0.406	< 0.001	0.343	< 0.001	0.349	< 0.001	1.42	1.36 – 1.48
	2010-2011	0.344	< 0.001	0.356	< 0.001	0.305	< 0.001	0.313	< 0.001	1.37	1.31 – 1.43
	2012-2013	0.321	< 0.001	0.331	< 0.001	0.292	< 0.001	0.302	< 0.001	1.35	1.30 – 1.41
	2014-2015	0.934	< 0.001	0.946	< 0.001	0.924	< 0.001	0.938	< 0.001	2.55	2.45 – 2.67
Immigrant generation	Native-born Finn	-	-	-	-	-	-	-	-	1	-
	Second-generation	-0.031	0.014	-0.072	< 0.001	0.023	0.088	-0.087	< 0.001	0.92	0.89 – 0.94
	First-generation	0.028	0.029	0.017	0.181	0.157	< 0.001	-0.102	< 0.001	0.90	0.88 – 0.93
Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.556	< 0.001	-0.558	< 0.001	-0.498	< 0.001	-0.501	< 0.001	0.61	0.60 – 0.61

Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	0.156	< 0.001	0.166	< 0.001	0.185	< 0.001	0.175	< 0.001	1.19	1.17 – 1.21
	Tampere	0.115	< 0.001	0.133	< 0.001	0.174	< 0.001	0.157	< 0.001	1.17	1.15 – 1.19
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.826	< 0.001			0.109	< 0.001	0.116	< 0.001	1.12	1.11 – 1.14
	Unemployed	0.508	< 0.001			0.387	< 0.001	0.302	< 0.001	1.35	1.31 – 1.39
	Other	-0.410	< 0.001			-0.132	< 0.001	-0.140	< 0.001	0.87	0.85 – 0.89
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.766	< 0.001			0.735	< 0.001	0.728	< 0.001	2.07	2.01 – 2.13
	3rd decile	0.898	< 0.001			0.849	< 0.001	0.855	< 0.001	2.35	2.28 – 2.42
	4th decile	1.200	< 0.001			1.110	< 0.001	1.120	< 0.001	3.06	2.98 – 3.16
	5th decile	1.344	< 0.001			1.233	< 0.001	1.241	< 0.001	3.46	3.36 – 3.57
	6th decile	1.511	< 0.001			1.391	< 0.001	1.403	< 0.001	4.07	3.95 – 4.19
	7th decile	1.777	< 0.001			1.637	< 0.001	1.652	< 0.001	5.22	5.06 – 5.38
	8th decile	1.986	< 0.001			1.848	< 0.001	1.859	< 0.001	6.42	6.22 – 6.63
	9th decile	2.118	< 0.001			2.008	< 0.001	2.009	< 0.001	7.46	7.22 – 7.71
	10th decile	2.149	< 0.001			2.120	< 0.001	2.127	< 0.001	8.39	8.10 – 8.69
	No income or missing	-0.377	< 0.001			-0.333	< 0.001	-0.319	< 0.001	0.73	0.70 – 0.76
Parental household income (at age 16)	1st decile	-	-					-	-	1	-
	2nd decile	0.105	< 0.001					-0.029	0.220	0.97	0.93 – 1.02
	3rd decile	0.013	0.519					-0.143	< 0.001	0.87	0.83 – 0.91
	4th decile	-0.065	0.001					-0.294	< 0.001	0.75	0.72 – 0.78
	5th decile	-0.129	< 0.001					-0.380	< 0.001	0.68	0.66 – 0.71
	6th decile	-0.183	< 0.001					-0.430	< 0.001	0.65	0.63 – 0.68
	7th decile	-0.271	< 0.001					-0.518	< 0.001	0.60	0.57 – 0.62
	8th decile	-0.307	< 0.001					-0.572	< 0.001	0.56	0.54 – 0.59

	9th decile	-0.362	< 0.001			-0.639	< 0.001	0.53	0.51 – 0.55
	10th decile	-0.448	< 0.001			-0.650	< 0.001	0.52	0.50 – 0.54
Parental neighbourhood type	Under-representation	-	-			-	-	1	-
	Neutral	0.011	0.081			0.043	< 0.001	1.04	1.03 – 1.06
	Over-representation	0.076	< 0.001			0.071	< 0.001	1.07	1.06 – 1.09
AIC				1 012 155	954 797			950 525	
Nagelkerke R^2				0.248	0.304			0.308	

Note: N = 1 661 298 (person years), the coefficients are showing the log-odds of the home-leaving during the year compared to the reference category

* Outcome-variable: 1 = home-leaving, 0 = home-leaving is not observed, ** Age is always controlled (including the single-predictor analysis)

Table 7b. Results of logistic regression analyses for the timing of the home-leaving event* (native-born Finns excluded)

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.468	< 0.001	2.462	< 0.001	1.934	< 0.001	1.932	< 0.001	6.90	6.43 – 7.41
	20-21	3.010	< 0.001	3.020	< 0.001	2.156	< 0.001	2.160	< 0.001	8.67	8.03 – 9.38
	22-23	3.056	< 0.001	3.075	< 0.001	2.068	< 0.001	2.071	< 0.001	7.93	7.25 – 8.67
	24-25	2.847	< 0.001	2.855	< 0.001	1.820	< 0.001	1.819	< 0.001	6.17	5.50 – 6.92
	26-27	2.781	< 0.001	2.770	< 0.001	1.722	< 0.001	1.714	< 0.001	5.55	4.72 – 6.52
	28-29	2.543	< 0.001	2.478	< 0.001	1.447	< 0.001	1.438	< 0.001	4.21	3.24 – 5.47
	30-32	2.488	< 0.001	2.166	< 0.001	1.115	< 0.001	1.095	< 0.001	2.99	1.90 – 4.70
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.220	0.006	0.226	0.005	0.188	0.021	0.190	0.020	1.21	1.03 – 1.42
	2004-2005	0.244	0.002	0.255	< 0.001	0.247	0.002	0.250	0.001	1.28	1.10 – 1.50
	2006-2007	0.211	0.006	0.219	0.004	0.170	0.028	0.171	0.027	1.19	1.02 – 1.38
	2008-2009	0.124	0.101	0.138	0.069	0.064	0.402	0.064	0.402	1.07	0.92 – 1.24

	2010-2011	0.052	0.487	0.075	0.320	0.004	0.961	0.003	0.971	1.00	0.86 – 1.17
	2012-2013	0.017	0.822	0.049	0.513	-0.005	0.950	-0.006	0.938	0.99	0.86 – 1.16
	2014-2015	0.708	< 0.001	0.747	< 0.001	0.717	< 0.001	0.718	< 0.001	2.05	1.77 – 2.38
Immigrant generation	First-generation	-	-	-	-	-	-	-	-	1	-
	Second-generation	-0.083	< 0.001	-0.105	< 0.001	-0.148	< 0.001	-0.097	< 0.001	0.91	0.87 – 0.95
(Parental) country of origin	Other Western countries	-	-	-	-	-	-	-	-	1	-
	East Europe	0.046	0.038	-0.002	0.932	-0.062	0.015	-0.097	< 0.001	0.91	0.86 – 0.96
	West Asia and North Africa	0.018	0.519	-0.062	0.034	-0.020	0.508	-0.103	< 0.001	0.90	0.85 – 0.96
	Sub-Saharan Africa	0.007	0.825	-0.044	0.208	0.026	0.459	-0.066	0.076	0.94	0.87 – 1.01
	Other Asia	-0.053	0.094	-0.086	0.008	-0.130	< 0.001	-0.178	< 0.001	0.84	0.78 – 0.89
Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.326	< 0.001	-0.333	< 0.001	-0.292	< 0.001	-0.293	< 0.001	0.75	0.72 – 0.77
Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	0.272	< 0.001	0.27	< 0.001	0.295	< 0.001	0.273	< 0.001	1.31	1.25 – 1.39
	Tampere	0.269	< 0.001	0.28	< 0.001	0.349	< 0.001	0.332	< 0.001	1.39	1.31 – 1.48
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.650	< 0.001			0.052	0.052	0.061	0.025	1.06	1.01 – 1.12
	Unemployed	0.480	< 0.001			0.308	< 0.001	0.273	< 0.001	1.31	1.19 – 1.45
	Other	-0.244	< 0.001			0.041	0.220	0.038	0.252	1.04	0.97 – 1.11
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.838	< 0.001			0.831	< 0.001	0.822	< 0.001	2.27	2.10 – 2.46
	3rd decile	0.902	< 0.001			0.898	< 0.001	0.902	< 0.001	2.46	2.26 – 2.68
	4th decile	1.123	< 0.001			1.108	< 0.001	1.116	< 0.001	3.05	2.80 – 3.33
	5th decile	1.170	< 0.001			1.141	< 0.001	1.147	< 0.001	3.15	2.87 – 3.45

	6th decile	1.268	< 0.001	1.257	< 0.001	1.265	< 0.001	3.54	3.22 – 3.90
	7th decile	1.510	< 0.001	1.512	< 0.001	1.529	< 0.001	4.61	4.17 – 5.10
	8th decile	1.737	< 0.001	1.752	< 0.001	1.765	< 0.001	5.84	5.27 – 6.48
	9th decile	1.832	< 0.001	1.852	< 0.001	1.861	< 0.001	6.43	5.77 – 7.17
	10th decile	1.809	< 0.001	1.884	< 0.001	1.898	< 0.001	6.67	5.92 – 7.52
	No income or missing	-0.196	< 0.001	-0.193	< 0.001	-0.187	< 0.001	0.83	0.75 – 0.92
Parental household income (at age 16)	1st decile	-	-			-	-	1	-
	2nd decile	-0.042	0.309			-0.142	< 0.001	0.87	0.8 – 0.94
	3rd decile	0.014	0.705			-0.076	0.043	0.93	0.86 – 1.00
	4th decile	-0.072	0.068			-0.215	< 0.001	0.81	0.75 – 0.87
	5th decile	-0.070	0.080			-0.205	< 0.001	0.81	0.75 – 0.88
	6th decile	-0.016	0.684			-0.147	< 0.001	0.86	0.80 – 0.94
	7th decile	-0.111	0.004			-0.257	< 0.001	0.77	0.71 – 0.84
	8th decile	-0.191	< 0.001			-0.336	< 0.001	0.71	0.66 – 0.77
	9th decile	-0.206	< 0.001			-0.362	< 0.001	0.70	0.64 – 0.75
	10th decile	-0.299	< 0.001			-0.396	< 0.001	0.67	0.62 – 0.73
Parental neighbouhood type	Under-representation	-	-			-	-	1	-
	Neutral	-0.017	0.497			-0.026	0.319	0.97	0.93 – 1.03
	Over-representation	0.014	0.490			-0.035	0.122	0.97	0.92 – 1.01
AIC				87 444	83 710			83 541	
Nagelkerke R^2				0.206	0.251			0.253	

Note: N = 145 967 (person years), the coefficients are showing the log-odds of the home-leaving during the year compared to the reference category.

* Outcome-variable: 1 = home-leaving, 0 = home-leaving is not observed; ** Age is always controlled

5.2. Destination neighbourhood types

5.2.1. Description of the destination neighbourhood types

Two preliminary analyses are conducted before further describing the destination neighbourhood types for the home-leaving event. Firstly, a simple cross-tabulation (Table 8) is used to see whether the home-leaver moved to a neighbourhood different from his or her parental home. Overall, it is more common for home-leavers to change a postal code area regardless of the immigrant generation and country of origin. However, moving within the same neighbourhood is noticeably common for immigrants from West Asia and North Africa. 41 per cent of them does not change a postal code area in the event of home-leaving. For the second generation in all groups, changing the neighbourhood is more common than for the immigrants from the same country of origin.

Table 8. Change of neighbourhoods in the home-leaving event (%)

(Parental*) country of origin	Different neighbourhood	Same neighbourhood	Total	Total (n)
Finland	81.42	18.58	100	189 380
Second-generation: total	78.01	21.99	100	*8 354*
Other Western countries	80.89	19.11	100	3 757
East Europe	76.52	23.48	100	1 857
West Asia and North Africa	76.99	23.01	100	1 221
Sub-Saharan Africa	76.91	23.09	100	576
Other Asia	71.47	28.53	100	943
First-generation: total	68.46	31.54	100	*8 269*
Other Western countries	75.49	24.51	100	506
East Europe	71.27	28.73	100	4 633
West Asia and North Africa	59.39	40.61	100	1 401
Sub-Saharan Africa	65.08	34.92	100	925
Other Asia	67.54	32.46	100	804
Total	80.76	19.24	100	206 003

* Prioritizing the foreign-born parent

Secondly, another preliminary analysis using cross-tabulation (Appendix 4) is conducted for the transitions between neighbourhood types in the event of home-leaving. This table only takes into account the home-leaving events which have occurred within the observation window and it does not yet show the impact of the different lengths in the observation windows for population groups. However, ít does show that it is generally more common to move within the same neighbourhood

type. In addition, there are more moves from and to neighbourhood categorized as non-concentrations compared to concentrations.

Longitudinal methods are employed for further description of destination neighbourhood types for different population groups. Competing-risk life-tables are calculated separately for both destination neighbourhood types. The hazard rates for home-leaving to different neighbourhood types by immigrant generation and country of origin are visualized in Figures 6a-m. These plots show the conditional probability, i.e., hazard, of home-leaving by age in years.

The general hazard plots by immigrant generation (Figure 6a-c) show that the general home-leaving pattern for the second generation in terms of destination neighbourhood types is closer to the native-born Finns compared to that between immigrants and native-born Finns. For the native-born Finns and the second generation, the hazard of moving to a concentration is constantly lower than that of the competing event type. For immigrants, the order of the two hazard plots is different than for the previous groups; the hazard of moving to a concentration is generally higher than moving to a non-concentration.

Figure 6a. Competing-risk hazard plots for home-leaving (native-born Finns)

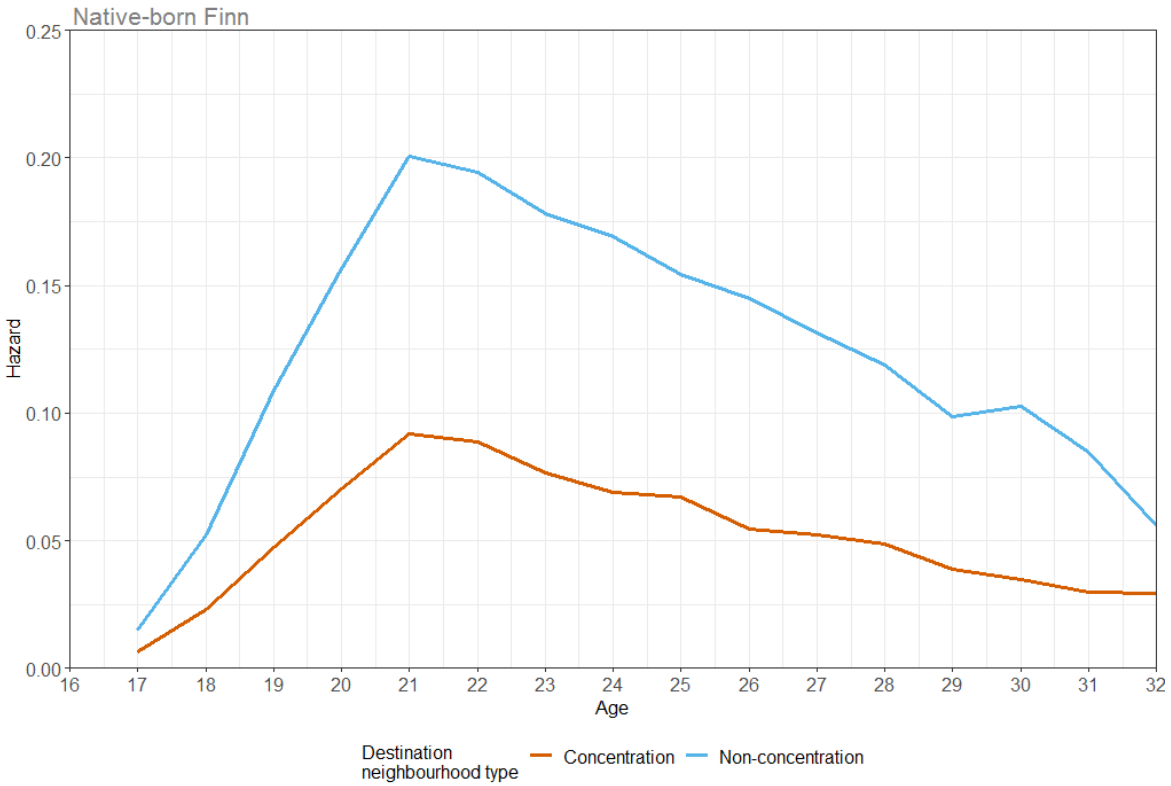


Figure 6b. Competing-risk hazard plots for home-leaving (second generation)

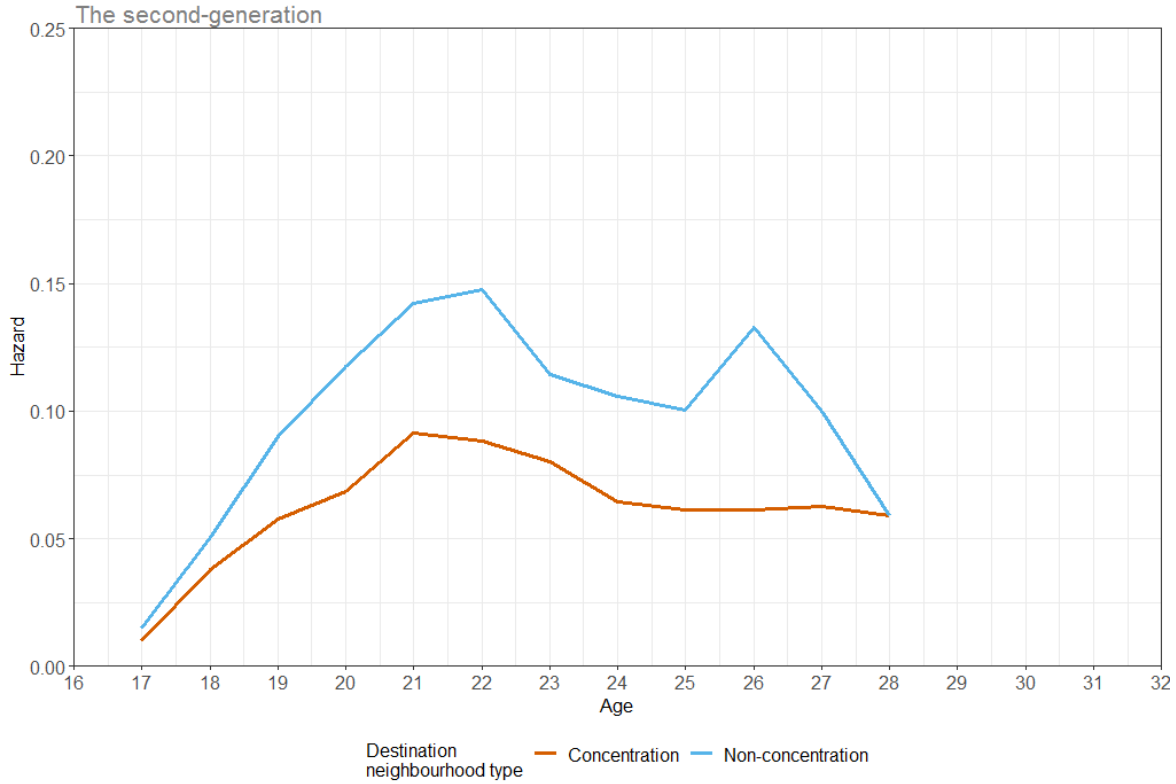


Figure 6c. Competing-risk hazard plots for home-leaving (first generation)

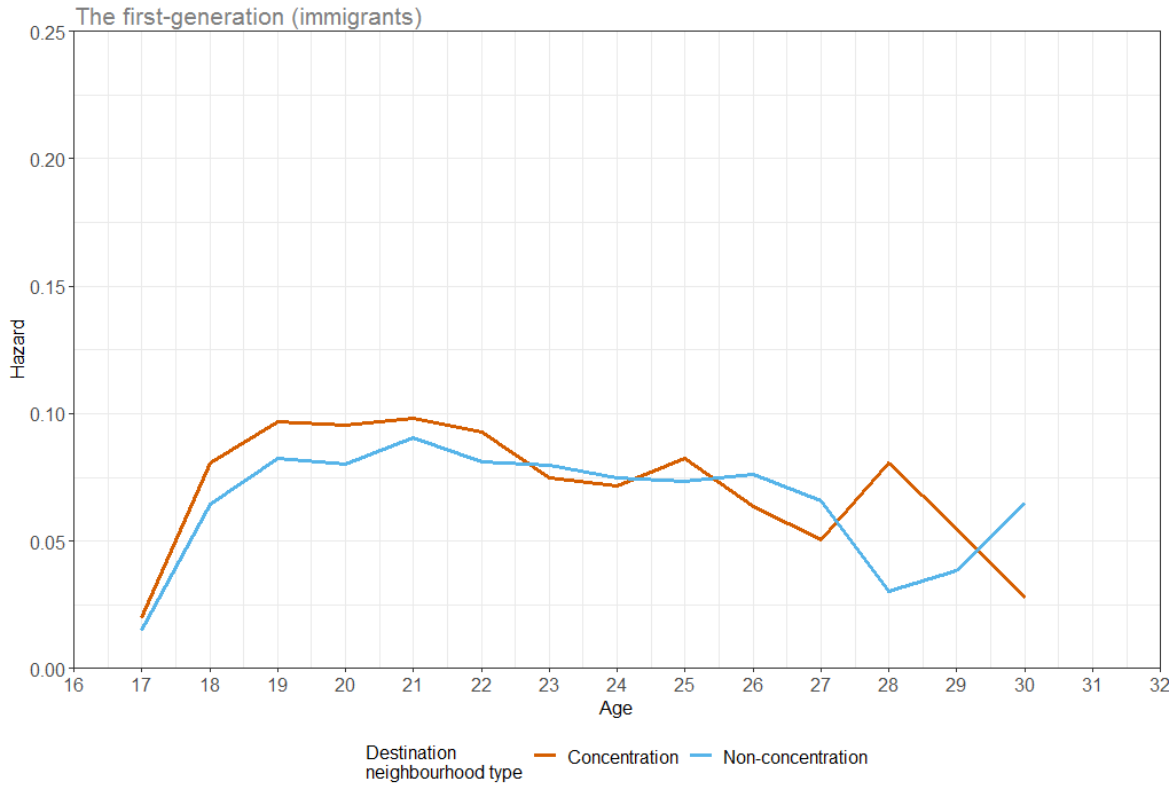


Figure 6d-e. Competing-risk hazard plots for home-leaving (other Western countries)

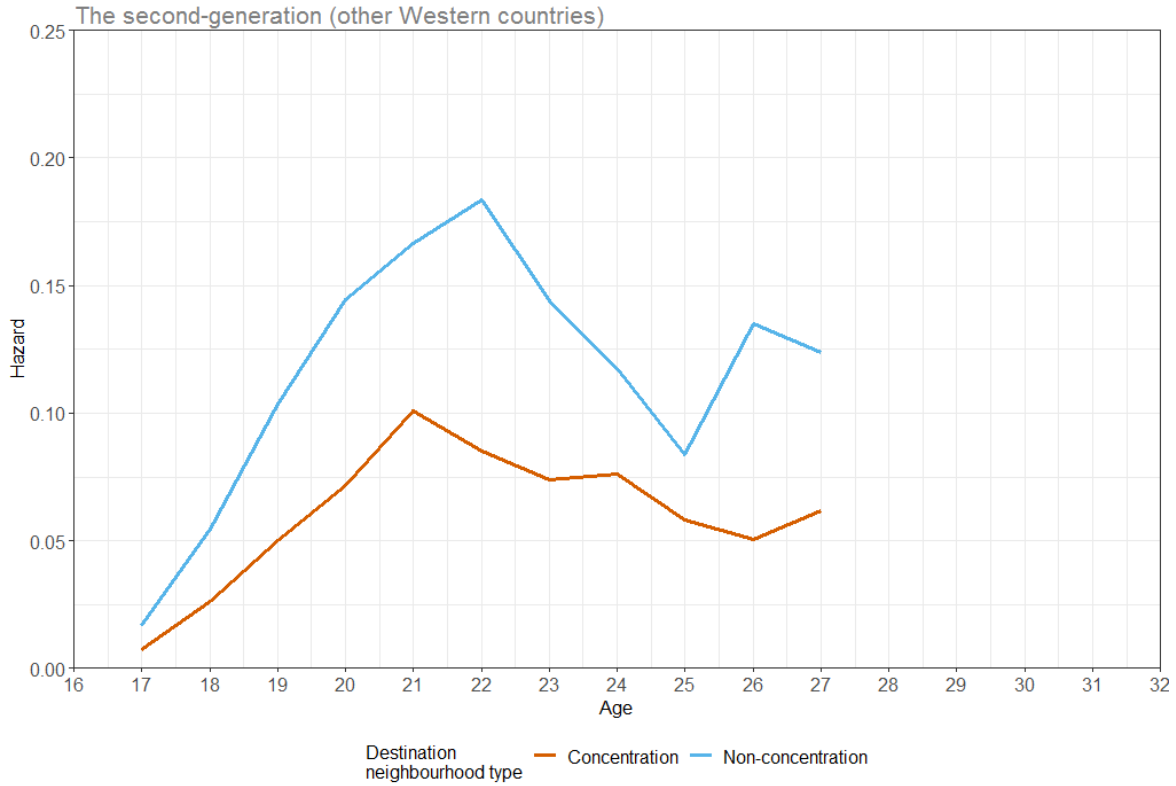
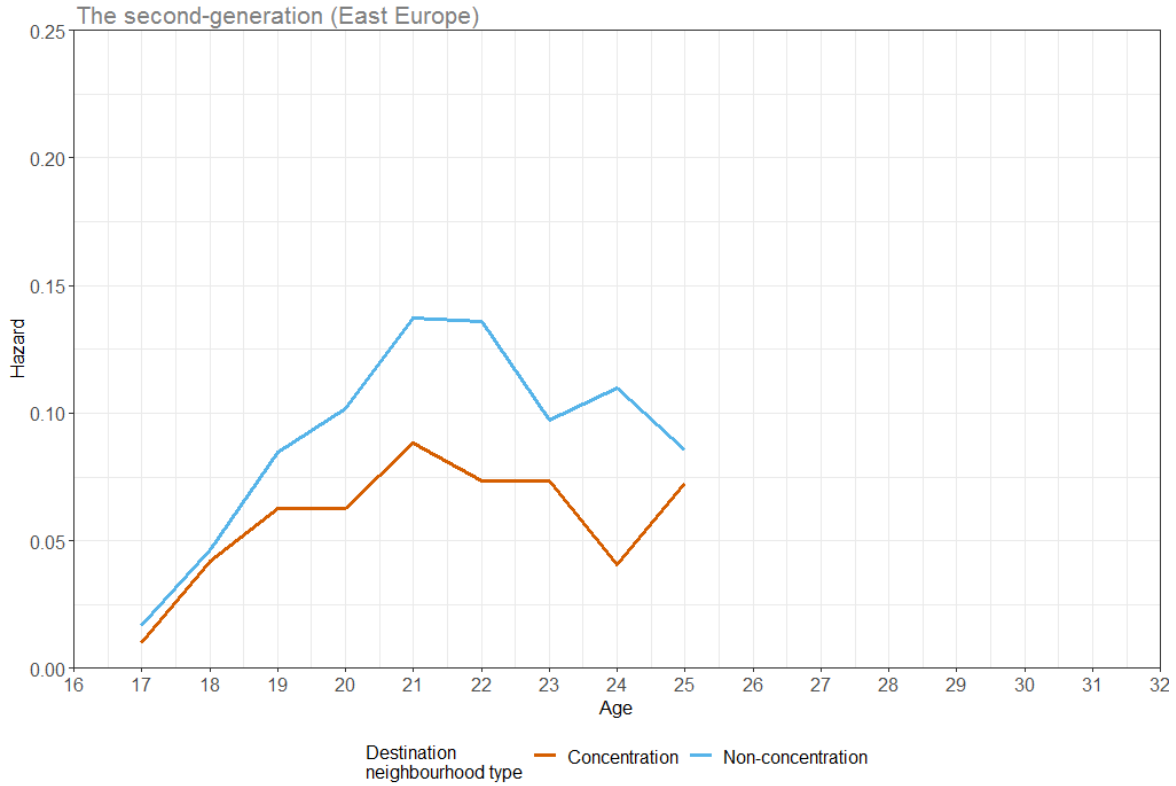


Figure 6f-g. Competing-risk hazard plots for home-leaving (East Europe)



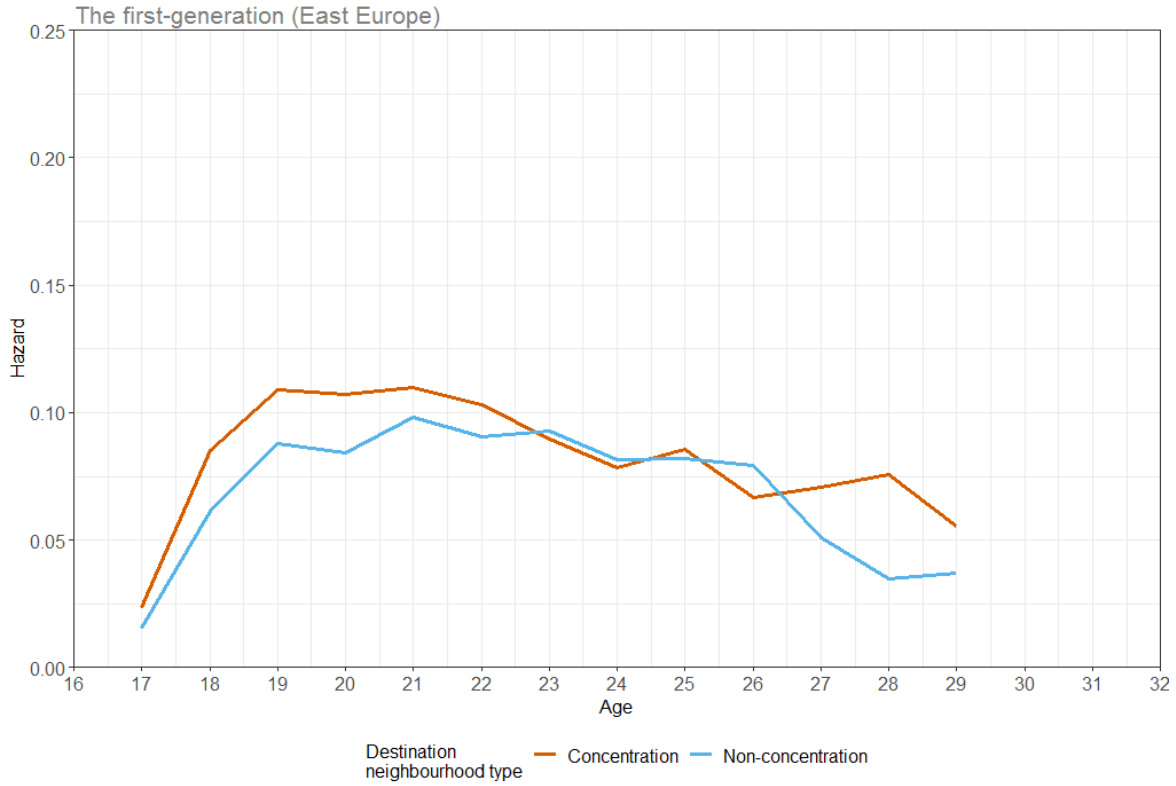
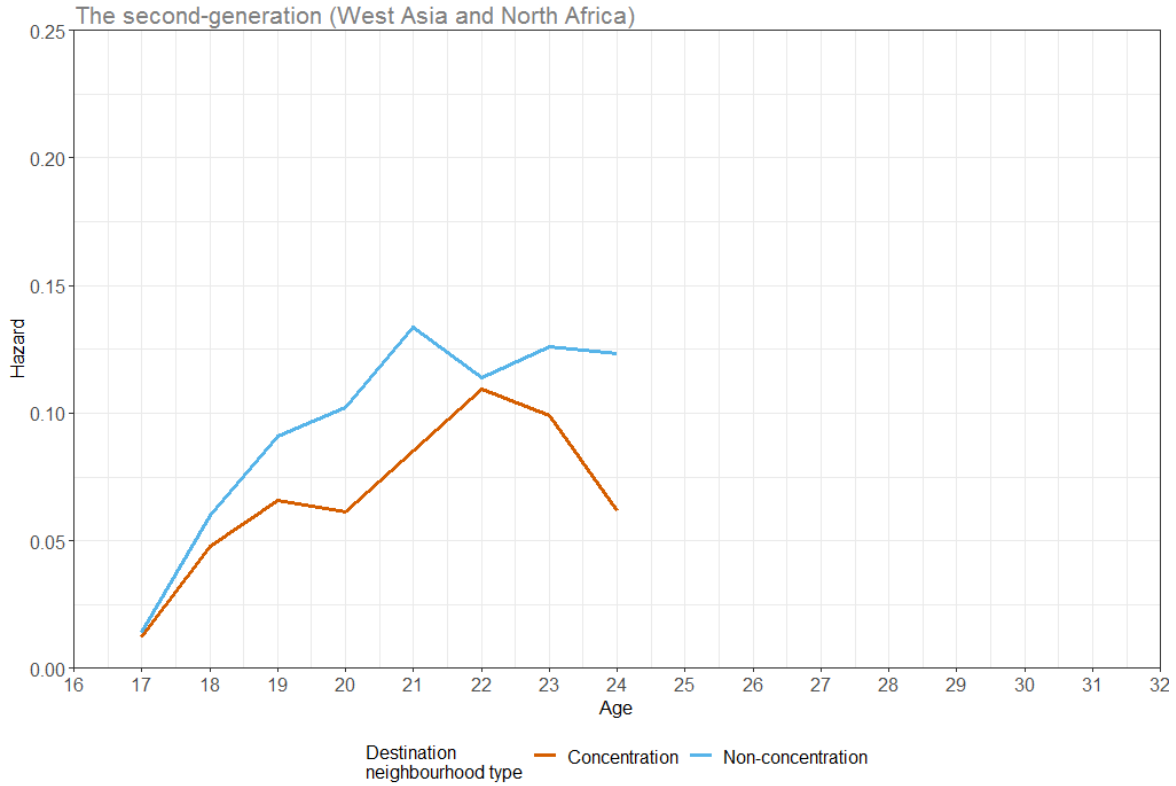


Figure 6h-i. Competing-risk hazard plots for home-leaving (West Asia and North Africa)



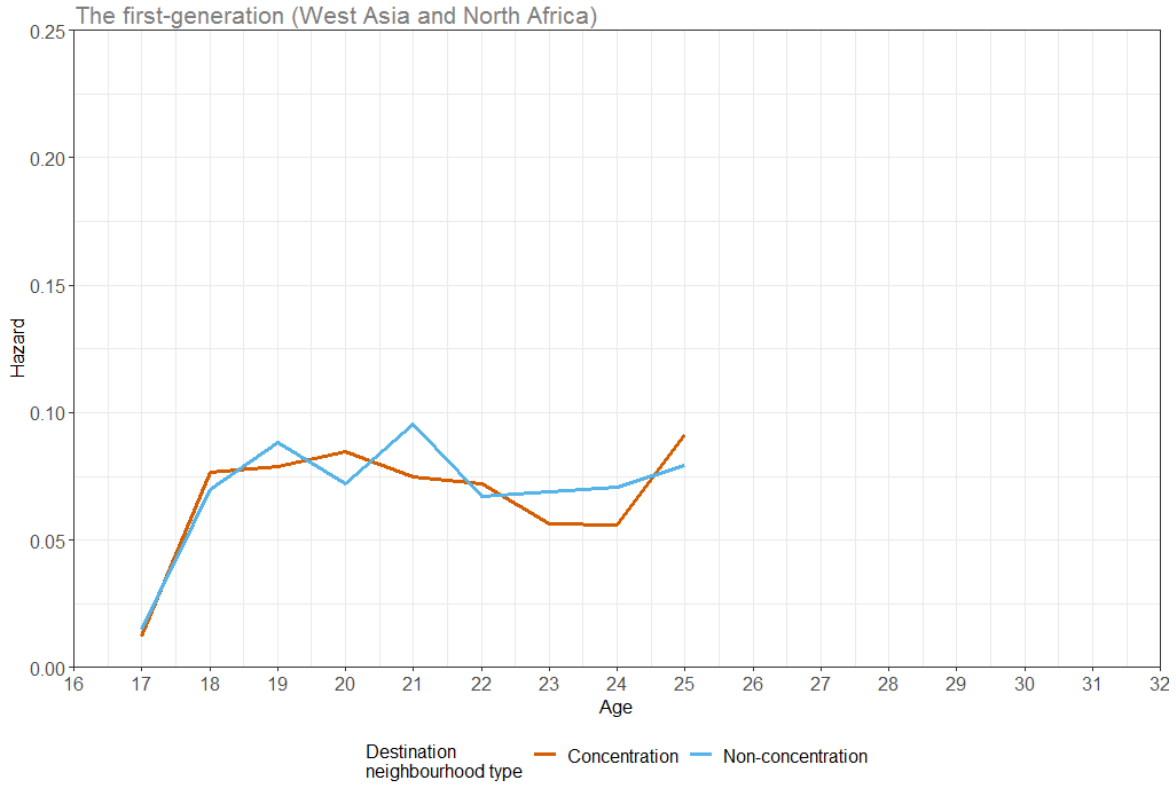
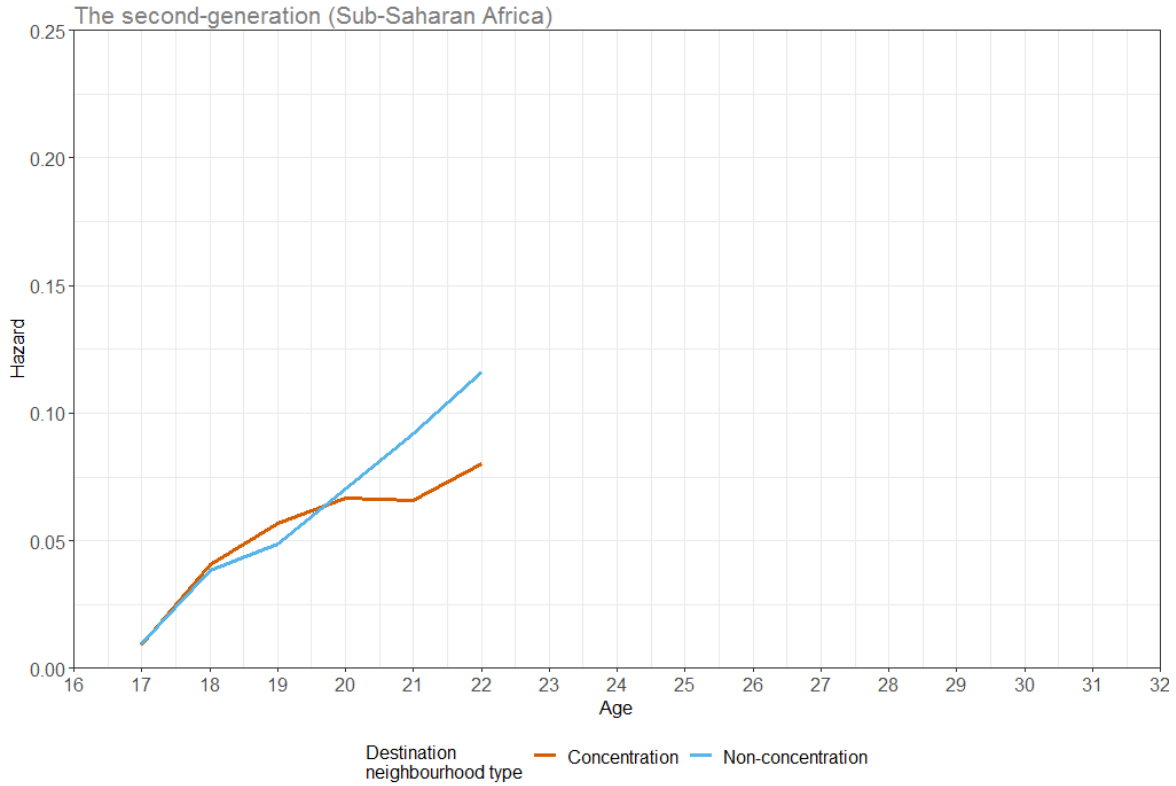


Figure 6j-k. Competing-risk hazard plots for home-leaving (sub-Saharan Africa)



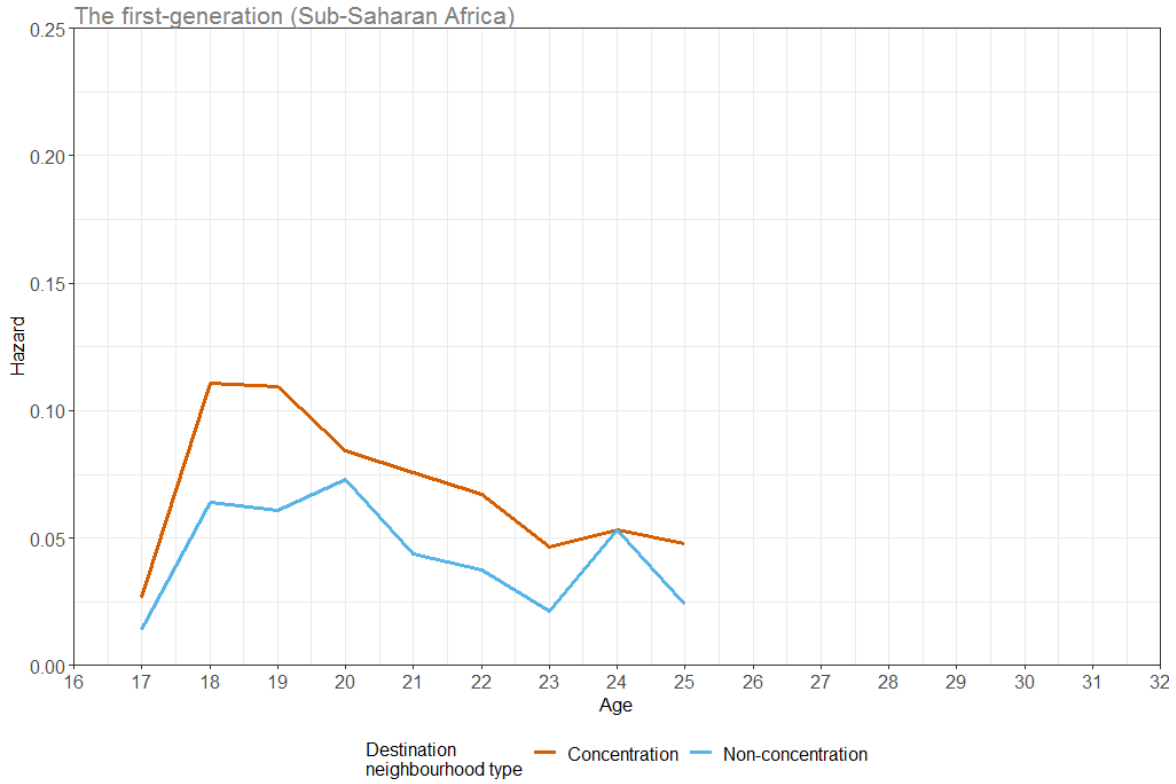
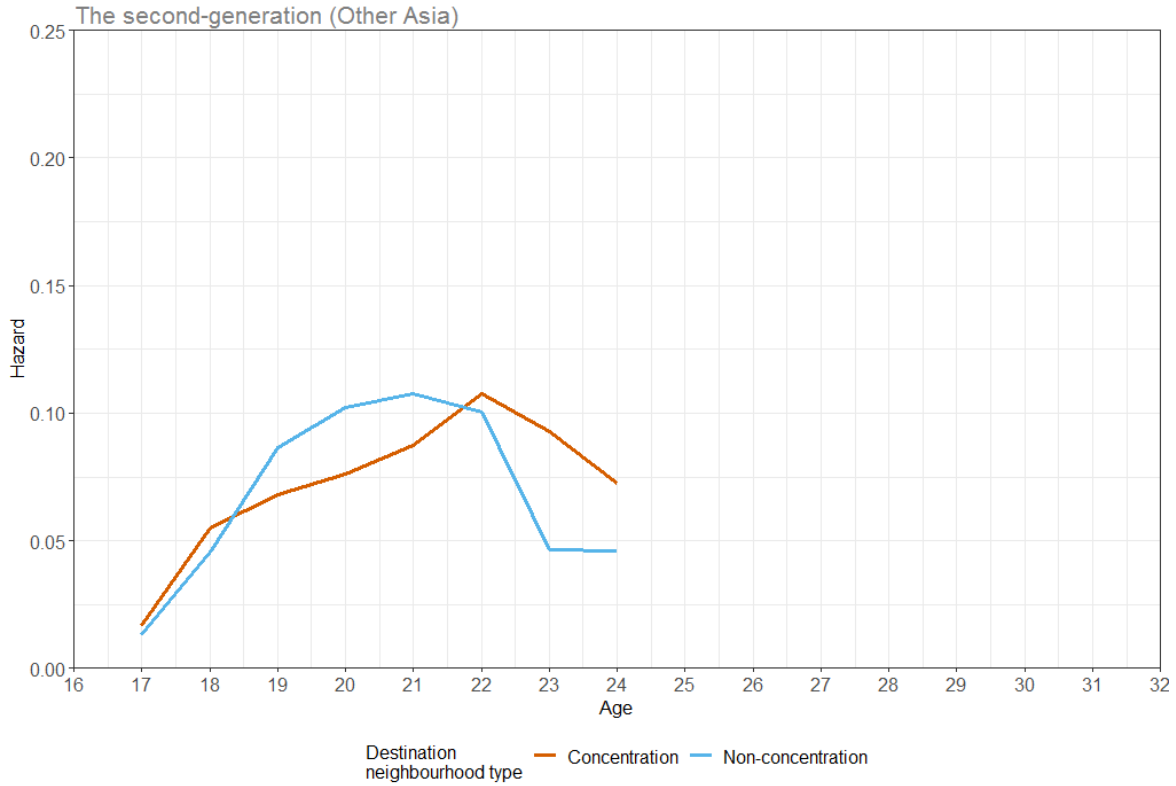
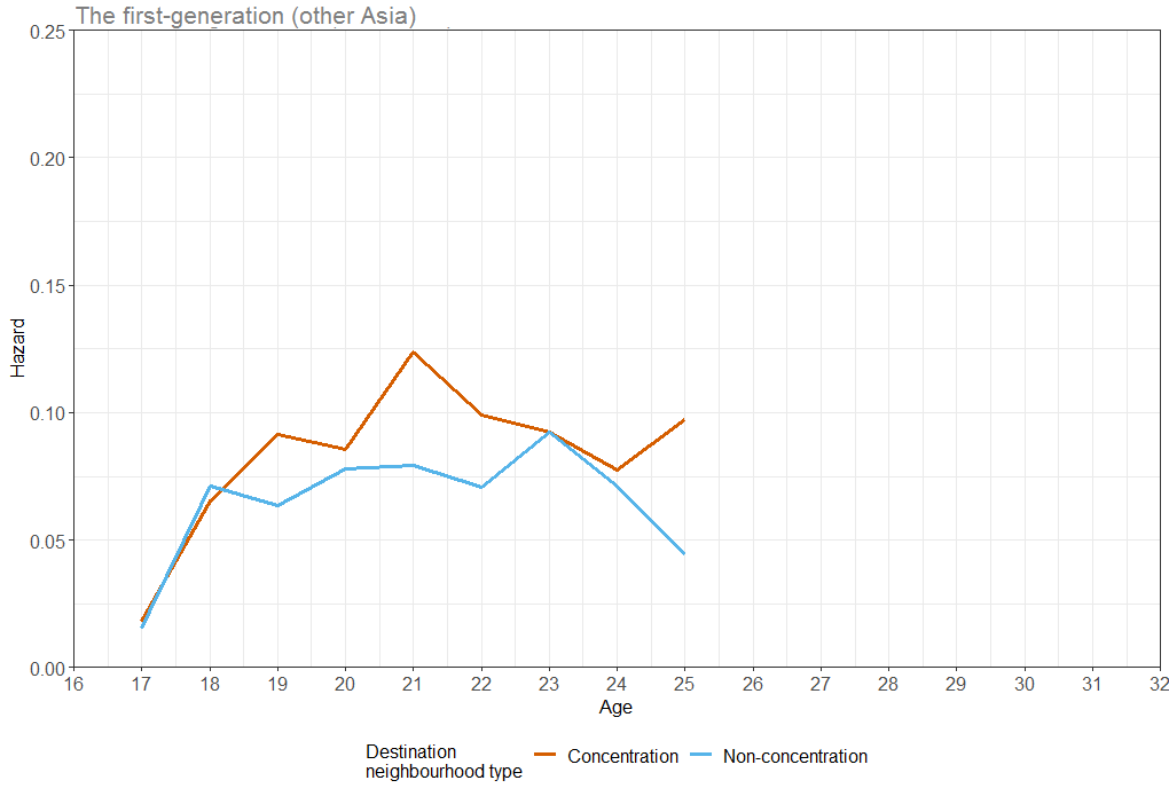


Figure 6l-m. Competing-risk hazard plots for home-leaving (other Asia)





These plots do however approach each other after the median home-leaving age, and the plots become generally flat and unstable due to small population sizes in the later follow-up years. Acknowledging the strong weight of the Western background among the second generation, and the eastern Europeans among the immigrants, it is necessary to study the hazards for different countries of origin as well (Figures 6d-m). For the second generation of all parental countries of origin, the hazard for home-leaving to a non-concentration is generally higher or very close to that of a concentration. The hazard of moving to a non-concentration is also constantly higher for the second generation compared to the immigrants with the same country of origin.

Attention must be paid in the variation of the population sizes in interpreting the hazard plots especially for the second generation who cannot be followed as long as their immigrant and native-born Finnish peers. The follow-up stops early for the second generation with a sub-Saharan African parental country of origin due to their late entrance in the follow-up which limits the possibility to compare their residential mobility patterns to their immigrant or native-born Finnish peers. The observations in their case are thus based on those who move at the early stage of the observation window.

5.2.2. Regression models for the destination neighbourhood types

Competing-risk logistic regression models are estimated separately for home-leaving to concentrations and non-concentrations. The regression models are run for the person-year data and the regression coefficients express the logit hazard of home-leaving in terms of time and destination neighbourhood type on a given year. The competing-risk models for the destination neighbourhood types are parallel which means that they must be interpreted in relation to another.

The results of the competing-risk logistic regression models for the home-leaving event to concentrations and non-concentrations for the complete person-year data is expressed in Tables 9a-b.

Table 9a. Results of competing-risk logistic regression analyses for home-leaving event to concentrations*

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.520	< 0.001	2.498	< 0.001	1.954	< 0.001	1.946	< 0.001	7.00	6.70 – 7.31
	20-21	3.540	< 0.001	3.531	< 0.001	2.633	< 0.001	2.639	< 0.001	14.00	13.38 – 14.66
	22-23	3.660	< 0.001	3.661	< 0.001	2.559	< 0.001	2.557	< 0.001	12.90	12.28 – 13.55
	24-25	3.426	< 0.001	3.423	< 0.001	2.280	< 0.001	2.272	< 0.001	9.70	9.14 – 10.29
	26-27	3.177	< 0.001	3.144	< 0.001	1.972	< 0.001	1.955	< 0.001	7.06	6.51 – 7.66
	28-29	3.040	< 0.001	2.943	< 0.001	1.759	< 0.001	1.719	< 0.001	5.58	4.93 – 6.32
	30-32	2.994	< 0.001	2.692	< 0.001	1.498	< 0.001	1.439	< 0.001	4.22	3.38 – 5.26
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.336	< 0.001	0.340	< 0.001	0.293	< 0.001	0.302	< 0.001	1.35	1.25 – 1.46
	2004-2005	0.483	< 0.001	0.489	< 0.001	0.454	< 0.001	0.465	< 0.001	1.59	1.48 – 1.72
	2006-2007	0.388	< 0.001	0.390	< 0.001	0.347	< 0.001	0.359	< 0.001	1.43	1.33 – 1.54
	2008-2009	0.367	< 0.001	0.361	< 0.001	0.314	< 0.001	0.330	< 0.001	1.39	1.29 – 1.50
	2010-2011	0.363	< 0.001	0.352	< 0.001	0.313	< 0.001	0.330	< 0.001	1.39	1.29 – 1.50
	2012-2013	0.392	< 0.001	0.377	< 0.001	0.350	< 0.001	0.374	< 0.001	1.45	1.35 – 1.57
	2014-2015	0.957	< 0.001	0.941	< 0.001	0.926	< 0.001	0.959	< 0.001	2.61	2.42 – 2.81
Immigrant generation	Native-born Finn	-	-	-	-	-	-	-	-	1	-
	Second-generation	0.204	< 0.001	0.115	< 0.001	0.194	< 0.001	-0.073	< 0.001	0.93	0.89 – 0.97
	First-generation	0.572	< 0.001	0.542	< 0.001	0.653	< 0.001	0.111	< 0.001	1.12	1.08 – 1.16
Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.494	< 0.001	-0.484	< 0.001	-0.425	< 0.001	-0.419	< 0.001	0.66	0.65 – 0.67

Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	-0.409	< 0.001	-0.391	< 0.001	-0.380	< 0.001	-0.333	< 0.001	0.72	0.70 – 0.74
	Tampere	-0.118	< 0.001	-0.081	< 0.001	-0.050	< 0.001	0,000	0.999	1,00	0.98 – 1.02
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.707	< 0.001			0.042	< 0.001	0.030	0.015	1.03	1.01 – 1.06
	Unemployed	0.480	< 0.001			0.383	< 0.001	0.216	< 0.001	1.24	1.18 – 1.30
	Other	-0.469	< 0.001			-0.213	< 0.001	-0.230	< 0.001	0.79	0.77 – 0.82
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.812	< 0.001			0.787	< 0.001	0.783	< 0.001	2.19	2.09 – 2.29
	3rd decile	0.869	< 0.001			0.840	< 0.001	0.870	< 0.001	2.39	2.27 – 2.51
	4th decile	1.125	< 0.001			1.066	< 0.001	1.102	< 0.001	3.01	2.87 – 3.16
	5th decile	1.276	< 0.001			1.210	< 0.001	1.248	< 0.001	3.48	3.32 – 3.66
	6th decile	1.431	< 0.001			1.360	< 0.001	1.409	< 0.001	4.09	3.89 – 4.30
	7th decile	1.661	< 0.001			1.574	< 0.001	1.633	< 0.001	5.12	4.86 – 5.39
	8th decile	1.855	< 0.001			1.771	< 0.001	1.823	< 0.001	6.19	5.87 – 6.52
	9th decile	1.980	< 0.001			1.920	< 0.001	1.954	< 0.001	7.06	6.68 – 7.45
	10th decile	1.965	< 0.001			1.981	< 0.001	2.032	< 0.001	7.63	7.20 – 8.08
	No income or missing	-0.344	< 0.001			-0.306	< 0.001	-0.293	< 0.001	0.75	0.70 – 0.80
Parental household income (at age 16)	1st decile	-	-					-	-	1	-
	2nd decile	0.079	0.015					-0.012	0.718	0.99	0.93 – 1.06
	3rd decile	-0.072	0.016					-0.146	< 0.001	0.86	0.81 – 0.92
	4th decile	-0.209	< 0.001					-0.294	< 0.001	0.75	0.70 – 0.79
	5th decile	-0.298	< 0.001					-0.362	< 0.001	0.70	0.66 – 0.74
	6th decile	-0.415	< 0.001					-0.436	< 0.001	0.65	0.61 – 0.68
	7th decile	-0.533	< 0.001					-0.516	< 0.001	0.60	0.56 – 0.63
	8th decile	-0.598	< 0.001					-0.561	< 0.001	0.57	0.54 – 0.60

	9th decile	-0.660	< 0.001			-0.619	< 0.001	0.54	0.51 – 0.57
	10th decile	-0.751	< 0.001			-0.639	< 0.001	0.53	0.50 – 0.55
Parental neighbouhood type	Under-representation	-	-			-	-	1	-
	Neutral	0.285	< 0.001			0.277	< 0.001	1.32	1.29 – 1.35
	Over-representation	0.931	< 0.001			0.874	< 0.001	2.40	2.35 – 2.44
AIC				460 640	441 942			431 170	
Nagelkerke R^2				0.174	0.213			0.235	

Note: N = 1 521 144 (person years), the coefficients are showing the log-odds of the home-leaving to a concentration during the year compared to the reference category
* Outcome-variable: 1 = home-leaving to a concentration, 0 = home-leaving to a concentration is not observed; ** Age is always controlled

Table 9b. Results of competing-risk logistic regression analyses for home-leaving event to non-concentrations*

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	b	p-value
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.529	< 0.001	2.505	< 0.001	1.881	< 0.001	1.887	< 0.001	6.60	6.40 – 6.81
	20-21	3.563	< 0.001	3.575	< 0.001	2.527	< 0.001	2.552	< 0.001	12.83	12.42 –
	22-23	3.696	< 0.001	3.737	< 0.001	2.455	< 0.001	2.478	< 0.001	11.92	11.51 –
	24-25	3.518	< 0.001	3.559	< 0.001	2.220	< 0.001	2.237	< 0.001	9.37	8.98 – 9.77
	26-27	3.354	< 0.001	3.382	< 0.001	1.998	< 0.001	2.009	< 0.001	7.46	7.05 – 7.89
	28-29	3.118	< 0.001	3.109	< 0.001	1.701	< 0.001	1.713	< 0.001	5.54	5.08 – 6.05
	30-32	3.275	< 0.001	3.043	< 0.001	1.633	< 0.001	1.632	< 0.001	5.11	4.43 – 5.91
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.320	< 0.001	0.329	< 0.001	0.262	< 0.001	0.265	< 0.001	1.30	1.24 – 1.38
	2004-2005	0.413	< 0.001	0.432	< 0.001	0.376	< 0.001	0.379	< 0.001	1.46	1.39 – 1.54
	2006-2007	0.407	< 0.001	0.428	< 0.001	0.364	< 0.001	0.364	< 0.001	1.44	1.37 – 1.52
	2008-2009	0.409	< 0.001	0.431	< 0.001	0.364	< 0.001	0.362	< 0.001	1.44	1.36 – 1.51
	2010-2011	0.340	< 0.001	0.363	< 0.001	0.307	< 0.001	0.305	< 0.001	1.36	1.29 – 1.43

	2012-2013	0.292	< 0.001	0.316	< 0.001	0.271	< 0.001	0.271	< 0.001	1.31	1.24 – 1.38
	2014-2015	0.930	< 0.001	0.955	< 0.001	0.927	< 0.001	0.929	< 0.001	2.53	2.40 – 2.67
Immigrant generation	Native-born Finn	-	-	-	-	-	-	-	-	1	-
	Second-generation	-0.168	< 0.001	-0.190	< 0.001	-0.095	< 0.001	-0.116	< 0.001	0.89	0.86 – 0.92
	First-generation	-0.405	< 0.001	-0.413	< 0.001	-0.283	< 0.001	-0.349	< 0.001	0.71	0.68 – 0.73
Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.570	< 0.001	-0.578	< 0.001	-0.525	< 0.001	-0.533	< 0.001	0.59	0.58 – 0.59
Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	0.363	< 0.001	0.367	< 0.001	0.394	< 0.001	0.364	< 0.001	1.44	1.42 – 1.46
	Tampere	0.216	< 0.001	0.222	< 0.001	0.265	< 0.001	0.219	< 0.001	1.25	1.23 – 1.27
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.876	< 0.001			0.144	< 0.001	0.157	< 0.001	1.17	1.15 – 1.19
	Unemployed	0.498	< 0.001			0.368	< 0.001	0.328	< 0.001	1.39	1.34 – 1.44
	Other	-0.395	< 0.001			-0.110	< 0.001	-0.113	< 0.001	0.89	0.87 – 0.92
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.744	< 0.001			0.709	< 0.001	0.700	< 0.001	2.01	1.95 – 2.08
	3rd decile	0.915	< 0.001			0.854	< 0.001	0.850	< 0.001	2.34	2.26 – 2.42
	4th decile	1.238	< 0.001			1.130	< 0.001	1.128	< 0.001	3.09	2.98 – 3.20
	5th decile	1.379	< 0.001			1.246	< 0.001	1.241	< 0.001	3.46	3.34 – 3.59
	6th decile	1.553	< 0.001			1.406	< 0.001	1.402	< 0.001	4.06	3.92 – 4.21
	7th decile	1.835	< 0.001			1.663	< 0.001	1.659	< 0.001	5.26	5.06 – 5.46
	8th decile	2.049	< 0.001			1.883	< 0.001	1.876	< 0.001	6.52	6.28 – 6.78
	9th decile	2.186	< 0.001			2.050	< 0.001	2.034	< 0.001	7.65	7.35 – 7.95
	10th decile	2.237	< 0.001			2.183	< 0.001	2.165	< 0.001	8.72	8.37 – 9.09
	No income or missing	-0.390	< 0.001			-0.338	< 0.001	-0.322	< 0.001	0.72	0.69 – 0.76

Parental household income (at age 16)	1st decile	-	-			-	-	1	-
	2nd decile	0.124	< 0.001			-0.039	0.189	0.96	0.91 – 1.02
	3rd decile	0.083	0.001			-0.127	< 0.001	0.88	0.84 – 0.93
	4th decile	0.051	0.034			-0.265	< 0.001	0.77	0.73 – 0.81
	5th decile	0.009	0.695			-0.353	< 0.001	0.70	0.67 – 0.74
	6th decile	-0.009	0.987			-0.389	< 0.001	0.68	0.65 – 0.71
	7th decile	-0.080	< 0.001			-0.476	< 0.001	0.62	0.59 – 0.65
	8th decile	-0.096	< 0.001			-0.527	< 0.001	0.59	0.56 – 0.62
	9th decile	-0.142	< 0.001			-0.591	< 0.001	0.55	0.53 – 0.58
	10th decile	-0.218	< 0.001			-0.591	< 0.001	0.55	0.53 – 0.58
Parental neighbourhood type	Under-representation	-	-			-	-	1	-
	Neutral	-0.083	< 0.001			-0.029	< 0.001	0.97	0.96 – 0.99
	Over-representation	-0.426	< 0.001			-0.395	< 0.001	0.67	0.66 – 0.68
AIC				780 093	735 531			731 214	
Nagelkerke R^2				0.225	0.28			0.285	

Note: N = 1 595 449 (person years), the coefficients are showing the log-odds of the home-leaving to a non-concentration during the year compared to the reference category. * Outcome-variable: 1 = home-leaving to a non-concentration, 0 = home-leaving to a non-concentration is not observed; ** Age is always controlled

Before adjusting other predictors besides the age, both the second generation and the immigrants have greater odds of moving to a concentration compared to the native-born Finns while simultaneously, the odds of moving to a non-concentration are smaller for these groups compared to the native-born Finns. When adjusting the other predictors, the size of the coefficient reduces clearly for both the first and the second generation in the final model for concentrations. The direction of the coefficient changes from positive to negative for the second generation in the model for concentrations when the parental socioeconomic predictors are taken into account.

The odds of moving to a concentration are 7 per cent smaller and to a non-concentration are 11 per cent smaller for the second generation compared to the native-born Finns when all the other predictors are adjusted. In the adjusted model, the odds of moving to a concentration in the event of home-leaving are 12 per cent greater for the first-generation immigrants than for the native-born Finns, while in the adjusted model for non-concentrations, the respective odds are 29 per cent smaller for the immigrants than for the native-born Finns. As noticed before, the home-leaving for the second generation is delayed compared to the native-born Finns. However, the small coefficients for the second generation suggest that home-leaving patterns of the native-born Finns are closer to those of the second generation than those of the immigrants.

After holding all other predictors constants, the home-leaving patterns in terms of destination neighbourhood type in Helsinki are the most similar to those in Tampere. The odds of moving to a concentration are the smallest in Turku where they are 28 per cent lower compared to Helsinki. Similarly, the odds of moving to a non-concentration are 44 per cent lower in Turku than in Helsinki. It is important to notice the greater weight of the native-born Finns in interpreting these results, especially in the case Turku and Tampere where the share of the population with an immigrant background from the total population is clearly smaller compared to the share in Helsinki.

As noticed in the analysis of the timing of the global home-leaving, higher personal income suggests a fairly similar increase in the odds for moving to either of the destination neighbourhood types. The delaying effect of higher parental income also has a similar effect on both destination neighbourhood types.

As noticed already in the descriptive analysis for destination neighbourhood types, it is more likely to move between same neighbourhood types than change neighbourhood types in the event of home-leaving. The odds of moving to a concentration is 2.4-times greater for individuals who were already from concentrations originally compared to the ones from neighbourhoods with an under-

representation when all the other predictors are adjusted. In the respective adjusted model, the odds of moving to a non-concentration are 33 per cent smaller for the ones who are moving from a concentration compared to those already originally from a non-concentration.

In order to see which one of the parental socioeconomic variables, income or neighbourhood type, has better explanatory power, these predictors are tested separately by including one at a time in the model while holding the demographic and personal economic attributes constant. The alternative model for home-leaving to concentration including parental neighbourhood type yields better goodness-of-fit statistics (AIC = 432 731, Nagelkerke R^2 = 0.232) than the model with parental income (AIC = 439 096, R^2 = 0.232). This suggests that the parental neighbourhood type explains the difference in moving to concentrations better than the parental income level.

In order to evaluate the differences in destination neighbourhood types between countries of origin, another logistic regression analysis is conducted by excluding the native-born Finns from the logistic regression analysis (Tables 10a–b). For most of the predictors, the results are similar than in the previous models with the complete study population. Additional information is gained on the effect of the immigrant generation and the country of origin.

The odds of moving to a concentration when leaving the parental home is 21 per cent smaller for the second generation compared to the first-generation immigrants after all other predictors are adjusted. The age-adjusted model for non-concentrations suggests clearly higher odds for the second generation compared to immigrants. However, this difference decreases when adding demographic and personal socioeconomic predictors. Adding the parental socioeconomic predictors reduces the higher odds for the second generation from 23 per cent to 5 per cent compared to the first-generation and the estimate also loses its statistical significance in this model. Before adjusting the predictors in the models, all other countries of origin suggest greater odds of moving to a concentration and smaller odds of moving to a non-concentration compared to the Western background. After adjusting all the other predictors in the analysis, the size of the coefficients reduces clearly in the model for concentrations and the coefficients also lose their statistical significance. On the other hand, the odds for moving to a non-concentration are still smaller for all other countries of origin compared to the Western background after adjusting all other predictors.

Table 10a. Results of competing-risk logistic regression analyses for home-leaving event to concentrations* (native-born Finns excluded)

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.456	< 0.001	2.455	< 0.001	1.960	< 0.001	1.952	< 0.001	7.05	6.37 – 7.79
	20-21	2.919	< 0.001	2.926	< 0.001	2.138	< 0.001	2.128	< 0.001	8.40	7.52 – 9.37
	22-23	2.964	< 0.001	2.945	< 0.001	2.030	< 0.001	2.024	< 0.001	7.57	6.68 – 8.58
	24-25	2.772	< 0.001	2.72	< 0.001	1.775	< 0.001	1.769	< 0.001	5.86	4.99 – 6.89
	26-27	2.582	< 0.001	2.502	< 0.001	1.558	< 0.001	1.543	< 0.001	4.68	3.7 – 5.91
	28-29	2.693	< 0.001	2.524	< 0.001	1.600	< 0.001	1.604	< 0.001	4.97	3.55 – 6.96
	30-32	2.066	< 0.001	1.668	< 0.001	0.736	0.049	0.724	0.054	2.06	0.99 – 4.31
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.15	0.164	0.162	0.134	0.126	0.246	0.131	0.23	1.14	0.92 – 1.41
	2004-2005	0.183	0.077	0.195	0.061	0.179	0.088	0.190	0.071	1.21	0.98 – 1.49
	2006-2007	0.135	0.188	0.148	0.148	0.091	0.376	0.105	0.313	1.11	0.91 – 1.36
	2008-2009	0.031	0.763	0.072	0.483	-0.012	0.903	-0.003	0.973	1.00	0.81 – 1.22
	2010-2011	-0.107	0.293	-0.032	0.753	-0.114	0.268	-0.106	0.302	0.90	0.73 – 1.10
	2012-2013	-0.069	0.494	0.031	0.756	-0.034	0.738	-0.032	0.759	0.97	0.79 – 1.18
	2014-2015	0.568	< 0.001	0.681	< 0.001	0.632	< 0.001	0.638	< 0.001	1.89	1.55 – 2.32
Immigrant generation	First-generation	-	-	-	-	-	-	-	-	1	-
	Second-generation	-0.398	< 0.001	-0.347	< 0.001	-0.378	< 0.001	-0.238	< 0.001	0.79	0.74 – 0.83
Parental country of origin	Other Western countries	-	-	-	-	-	-	-	-	1	-
	East Europe	0.443	< 0.001	0.256	< 0.001	0.196	< 0.001	0.004	0.911	1,00	0.93 – 1.08
	West Asia and North Africa	0.310	< 0.001	0.141	0.001	0.171	< 0.001	-0.088	0.053	0.92	0.84 – 1.00
	Sub-Saharan Africa	0.505	< 0.001	0.329	< 0.001	0.382	< 0.001	0.058	0.256	1.06	0.96 – 1.17
	Other Asia	0.342	< 0.001	0.217	< 0.001	0.169	< 0.001	-0.031	0.521	0.97	0.88 – 1.06

Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.308	< 0.001	-0.303	< 0.001	-0.275	< 0.001	-0.268	< 0.001	0.76	0.73 – 0.80
Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	0.051	0.183	0.030	0.432	0.048	0.223	0.007	0.854	1.01	0.93 – 1.09
	Tampere	0.129	0.002	0.161	< 0.001	0.223	< 0.001	0.250	< 0.001	1.28	1.18 – 1.40
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.531	< 0.001			-0.028	0.445	-0.019	0.615	0.98	0.91 – 1.06
	Unemployed	0.451	< 0.001			0.270	< 0.001	0.189	0.004	1.21	1.06 – 1.38
	Other	-0.295	< 0.001			-0.027	0.562	-0.018	0.697	0.98	0.90 – 1.08
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.847	< 0.001			0.845	< 0.001	0.837	< 0.001	2.31	2.07 – 2.57
	3rd decile	0.861	< 0.001			0.882	< 0.001	0.903	< 0.001	2.47	2.19 – 2.78
	4th decile	1.026	< 0.001			1.045	< 0.001	1.065	< 0.001	2.90	2.57 – 3.28
	5th decile	1.096	< 0.001			1.119	< 0.001	1.137	< 0.001	3.12	2.74 – 3.54
	6th decile	1.130	< 0.001			1.170	< 0.001	1.198	< 0.001	3.31	2.90 – 3.79
	7th decile	1.353	< 0.001			1.419	< 0.001	1.456	< 0.001	4.29	3.73 – 4.94
	8th decile	1.572	< 0.001			1.648	< 0.001	1.687	< 0.001	5.41	4.68 – 6.24
	9th decile	1.720	< 0.001			1.795	< 0.001	1.822	< 0.001	6.18	5.32 – 7.18
	10th decile	1.678	< 0.001			1.791	< 0.001	1.816	< 0.001	6.15	5.21 – 7.25
	No income or missing	-0.247	< 0.001			-0.228	0.002	-0.210	0.004	0.81	0.70 – 0.93
Parental household income (at age 16)	1st decile	-	-					-	-	1	-
	2nd decile	0.002	0.977					-0.088	0.11	0.92	0.82 – 1.02
	3rd decile	-0.011	0.814					-0.087	0.076	0.92	0.83 – 1.01
	4th decile	-0.098	0.057					-0.168	0.002	0.85	0.76 – 0.94
	5th decile	-0.155	0.004					-0.176	0.002	0.84	0.75 – 0.94

	6th decile	-0.127	0.017			-0.127	0.022	0.88	0.79 – 0.98
	7th decile	-0.228	< 0.001			-0.225	< 0.001	0.80	0.72 – 0.89
	8th decile	-0.361	< 0.001			-0.313	< 0.001	0.73	0.66 – 0.81
	9th decile	-0.468	< 0.001			-0.359	< 0.001	0.70	0.63 – 0.78
	10th decile	-0.674	< 0.001			-0.400	< 0.001	0.67	0.60 – 0.75
Parental neighbourhood type	Under-representation	-	-			-	-	1	-
	Neutral	0.231	< 0.001			0.168	< 0.001	1.18	1.09 – 1.29
	Over-representation	0.876	< 0.001			0.750	< 0.001	2.12	1.97 – 2.27
AIC				51 547	49 873			49 071	
Nagelkerke R^2				0.159	0.193			0.208	

Note: N = 137 064 (person years). The coefficients are showing the log-odds of home-leaving to a concentration during the year compared to the reference category.
* Outcome-variable: 1 = home-leaving to a concentration, 0 = home-leaving to a concentration is not observed; ** Age is always controlled

Table 10b. Results of competing-risk logistic regression analyses for home-leaving event to non-concentrations* (native-born Finns excluded)

		Single-predictor		Model 1		Model 2		Model 3			
Predictor	Categories	b	p-value	b	p-value	b	p-value	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	-	-	-	-	-	-	1	-
	18-19	2.479	< 0.001	2.469	< 0.001	1.910	< 0.001	1.910	< 0.001	6.75	6.12 – 7.45
	20-21	3.090	< 0.001	3.098	< 0.001	2.163	< 0.001	2.176	< 0.001	8.81	7.92 – 9.79
	22-23	3.136	< 0.001	3.172	< 0.001	2.085	< 0.001	2.089	< 0.001	8.07	7.16 – 9.10
	24-25	2.913	< 0.001	2.969	< 0.001	1.858	< 0.001	1.856	< 0.001	6.40	5.49 – 7.45
	26-27	2.941	< 0.001	2.976	< 0.001	1.840	< 0.001	1.816	< 0.001	6.15	5.01 – 7.54
	28-29	2.374	< 0.001	2.391	< 0.001	1.277	< 0.001	1.221	< 0.001	3.39	2.34 – 4.92
	30-32	2.773	< 0.001	2.507	< 0.001	1.363	< 0.001	1.313	< 0.001	3.72	2.17 – 6.36
Period	1999-2001	-	-	-	-	-	-	-	-	1	-
	2002-2003	0.299	0.009	0.301	0.008	0.260	0.024	0.257	0.026	1.29	1.03 – 1.62
	2004-2005	0.315	0.004	0.323	0.003	0.316	0.004	0.308	0.006	1.36	1.09 – 1.69

	2006-2007	0.302	0.005	0.302	0.005	0.257	0.019	0.244	0.026	1.28	1.03 – 1.58
	2008-2009	0.231	0.032	0.220	0.042	0.152	0.164	0.140	0.200	1.15	0.93 – 1.42
	2010-2011	0.213	0.047	0.193	0.073	0.128	0.237	0.116	0.287	1.12	0.91 – 1.39
	2012-2013	0.119	0.267	0.095	0.372	0.048	0.656	0.039	0.716	1.04	0.84 – 1.29
	2014-2015	0.857	< 0.001	0.832	< 0.001	0.813	< 0.001	0.807	< 0.001	2.24	1.81 – 2.77
Immigrant generation	First-generation	-	-	-	-	-	-	-	-	1	-
	Second-generation	0.207	< 0.001	0.126	< 0.001	0.084	0.002	0.048	0.084	1.05	0.99 – 1.11
Parental country of origin	Other Western countries	-	-	-	-	-	-	-	-	1	-
	East Europe	-0.264	< 0.001	-0.181	< 0.001	-0.244	< 0.001	-0.166	< 0.001	0.85	0.79 – 0.90
	West Asia and North	-0.188	< 0.001	-0.187	< 0.001	-0.143	< 0.001	-0.090	0.021	0.91	0.85 – 0.99
	Sub-Saharan Africa	-0.423	< 0.001	-0.371	< 0.001	-0.298	< 0.001	-0.196	< 0.001	0.82	0.74 – 0.91
	Other Asia	-0.358	< 0.001	-0.308	< 0.001	-0.363	< 0.001	-0.301	< 0.001	0.74	0.68 – 0.81
Gender	Female	-	-	-	-	-	-	-	-	1	-
	Male	-0.334	< 0.001	-0.349	< 0.001	-0.303	< 0.001	-0.314	< 0.001	0.73	0.70 – 0.77
Region	Helsinki	-	-	-	-	-	-	-	-	1	-
	Turku	0.440	< 0.001	0.447	< 0.001	0.483	< 0.001	0.479	< 0.001	1.61	1.51 – 1.73
	Tampere	0.381	< 0.001	0.370	< 0.001	0.447	< 0.001	0.386	< 0.001	1.47	1.36 – 1.58
Main type of activity	Student	-	-			-	-	-	-	1	-
	Employed	0.752	< 0.001			0.124	< 0.001	0.132	< 0.001	1.14	1.07 – 1.22
	Unemployed	0.496	< 0.001			0.334	< 0.001	0.348	< 0.001	1.42	1.25 – 1.61
	Other	-0.207	< 0.001			0.071	0.109	0.064	0.150	1.07	0.98 – 1.16
Personal income	1st decile	-	-			-	-	-	-	1	-
	2nd decile	0.828	< 0.001			0.814	< 0.001	0.806	< 0.001	2.24	2.01 – 2.5
	3rd decile	0.942	< 0.001			0.918	< 0.001	0.91	< 0.001	2.49	2.21 – 2.8

	4th decile	1.214	< 0.001	1.167	< 0.001	1.163	< 0.001	3.20	2.84 – 3.61
	5th decile	1.243	< 0.001	1.173	< 0.001	1.167	< 0.001	3.21	2.83 – 3.64
	6th decile	1.393	< 0.001	1.339	< 0.001	1.333	< 0.001	3.79	3.33 – 4.32
	7th decile	1.651	< 0.001	1.589	< 0.001	1.596	< 0.001	4.93	4.32 – 5.64
	8th decile	1.883	< 0.001	1.834	< 0.001	1.841	< 0.001	6.30	5.50 – 7.22
	9th decile	1.939	< 0.001	1.905	< 0.001	1.902	< 0.001	6.70	5.80 – 7.73
	10th decile	1.927	< 0.001	1.967	< 0.001	1.980	< 0.001	7.24	6.20 – 8.47
	No income or missing	-0.135	0.050	-0.131	0.063	-0.136	0.055	0.87	0.76 – 1.00
Parental household income (at age 16)	1st decile	-	-			-	-	1	-
	2nd decile	-0.097	0.094			-0.203	< 0.001	0.82	0.73 – 0.92
	3rd decile	0.040	0.425			-0.059	0.248	0.94	0.85 – 1.04
	4th decile	-0.039	0.471			-0.261	< 0.001	0.77	0.69 – 0.86
	5th decile	0.024	0.659			-0.223	< 0.001	0.80	0.72 – 0.89
	6th decile	0.099	0.061			-0.164	0.003	0.85	0.76 – 0.95
	7th decile	0.016	0.757			-0.280	< 0.001	0.76	0.68 – 0.84
	8th decile	-0.017	0.745			-0.349	< 0.001	0.71	0.63 – 0.78
	9th decile	0.037	0.450			-0.353	< 0.001	0.70	0.63 – 0.78
	10th decile	0.018	0.692			-0.389	< 0.001	0.68	0.61 – 0.75
Parental neighbourhood type	Under-representation	-	-			-	-	1	-
	Neutral	-0.123	< 0.001			-0.093	0.002	0.91	0.86 – 0.97
	Over-representation	-0.666	< 0.001			-0.661	< 0.001	0.52	0.49 – 0.55
AIC				56 380	53 944			53 284	
Nagelkerke R^2				0.179	0.222			0.234	

Note: N = 138 247 (person years). The coefficients are showing the log-odds of home-leaving to a non-concentration during the year compared to the reference category.

* Outcome-variable: 1 = home-leaving to a non-concentration, 0 = home-leaving to a non-concentration is not observed; ** Age is always controlled

5.3. Interaction of immigrant generation and country of origin

The regression models in this study have so far evaluated the effects for the immigrant generation and country of origin separately. In order to assess their possible interaction, an additional interaction term is created and added to the final model. Adding the interaction term between immigrant generation and country of origin statistically significantly improved the models ($p < 0.001$). The model with an interaction term also improves the goodness-of-fit statistics (AIC = 49 033 and Nagelkerke $R^2 = 0.209$ for the model for home-leaving to a concentration).

The effect of the interaction on the residential mobility patterns is evaluated in estimating adjusted models for the timing and neighbourhood types separately for the second generation. The results for these models are presented in Tables 11 (timing) and 12a–b (destination neighbourhood types).

The results without interaction conducted for all population with an immigrant background suggested that there is a statistically significant delay of home-leaving in almost all countries of origin compared to the Western origin, except the sub-Saharan origin, after adjusting the demographic and socioeconomic predictors (see Table 7b). When estimating an adjusted model for the timing separately for the second generation in Table 11, there is a delay in home-leaving in all other parental countries of origin compared to the Western background. The only exceptions are the individuals with a West Asian and North African parental country of origin whose difference in the timing compared to the group of reference obtains a statistically insignificant value and a small coefficient, suggesting their similarity to the Western background. The descriptive analysis showed previously that these two groups are already similar in their pace of home-leaving suggesting the similarity of the point of departure between these groups. With a 20 per cent smaller odds of home-leaving, the other Asian background suggests the largest difference in the timing compared to the Western background.

The results without interaction suggested previously that the greater odds for moving to a concentration remained for all other countries of origins compared to the Western background even after adjusting the demographic and personal attributes (see Table 10a). Adding the parental socioeconomic attributes reduced those differences and the remaining gaps in the complete model were not statistically significant. In the interaction model, the East European and sub-Saharan African parental country of origin appears as the most distinctive group among the second generation compared to the Western background; the odds of moving to a concentration are statistically significantly lower for them after adjusting all other predictors.

Table 11. Results of logistic regression analyses for the timing of the home-leaving event* (the second generation only)

				Model 3	
Predictor	Categories	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	1	-
	18-19	1.829	< 0.001	6.23	5.62 – 6.90
	20-21	2.258	< 0.001	9.56	8.55 – 10.7
	22-23	2.263	< 0.001	9.61	8.45 – 10.93
	24-25	1.894	< 0.001	6.65	5.58 – 7.92
	26-27	1.984	< 0.001	7.27	5.68 – 9.31
	28-29	1.688	< 0.001	5.41	3.53 – 8.29
	30-32	1.024	0.008	2.78	1.31 – 5.90
Period	1999-2001	-	-	1	-
	2002-2003	0.517	0.003	1.68	1.20 – 2.35
	2004-2005	0.726	< 0.001	2.07	1.49 – 2.86
	2006-2007	0.689	< 0.001	1.99	1.45 – 2.75
	2008-2009	0.593	< 0.001	1.81	1.32 – 2.49
	2010-2011	0.566	< 0.001	1.76	1.28 – 2.42
	2012-2013	0.528	0.001	1.70	1.24 – 2.32
	2014-2015	1.260	< 0.001	3.53	2.57 – 4.83
Parental country of origin	Other Western countries	-	-	1	-
	East Europe	-0.176	< 0.001	0.84	0.78 – 0.90
	West Asia and North Africa	-0.038	0.338	0.96	0.89 – 1.04
	Sub-Saharan Africa	-0.239	< 0.001	0.79	0.71 – 0.87
	Other Asia	-0.225	< 0.001	0.80	0.73 – 0.87
Gender	Female	-	-	1	-
	Male	-0.313	< 0.001	0.73	0.70 – 0.77
Region	Helsinki	-	-	1	-
	Turku	0.326	< 0.001	1.39	1.28 – 1.5
	Tampere	0.374	< 0.001	1.45	1.34 – 1.58
Main type of activity	Student	-	-	1	-
	Employed	0.123	0.001	1.13	1.05 – 1.22
	Unemployed	0.373	< 0.001	1.45	1.25 – 1.69
	Other	0.011	0.816	1.01	0.92 – 1.11
Personal income	1st decile	-	-	1	-
	2nd decile	0.756	< 0.001	2.13	1.89 – 2.40
	3rd decile	0.914	< 0.001	2.49	2.20 – 2.83
	4th decile	1.173	< 0.001	3.23	2.84 – 3.67
	5th decile	1.230	< 0.001	3.42	2.99 – 3.91
	6th decile	1.377	< 0.001	3.96	3.45 – 4.55
	7th decile	1.593	< 0.001	4.92	4.26 – 5.68

	8th decile	1.885	< 0.001	6.59	5.69 – 7.62
	9th decile	1.992	< 0.001	7.33	6.27 – 8.57
	10th decile	1.983	< 0.001	7.26	6.10 – 8.65
	No income or missing	-0.292	< 0.001	0.75	0.64 – 0.87
Parental household income (at age 16)	1st decile	-	-	1	-
	2nd decile	-0.015	0.841	0.98	0.85 – 1.14
	3rd decile	-0.093	0.188	0.91	0.79 – 1.05
	4th decile	-0.257	< 0.001	0.77	0.68 – 0.88
	5th decile	-0.274	< 0.001	0.76	0.67 – 0.87
	6th decile	-0.161	< 0.001	0.85	0.75 – 0.97
	7th decile	-0.256	< 0.001	0.77	0.68 – 0.88
	8th decile	-0.363	< 0.001	0.70	0.61 – 0.79
	9th decile	-0.401	< 0.001	0.67	0.59 – 0.76
	10th decile	-0.441	< 0.001	0.64	0.57 – 0.72
Parental neighbouhood type	Under-representation	-	-	1	-
	Neutral	-0.031	0.358	0.97	0.91 – 1.04
	Over-representation	-0.022	0.474	0.98	0.92 – 1.04
AIC				41 251	
Nagelkerke R^2				0.287	

Note: N = 77 788 (person years). The coefficients are showing the log-odds of home-leaving during the year compared to the reference category. * Outcome-variable: 1 = home-leaving, 0 = home-leaving is not observed; ** Age is always controlled

Table 12a. Results of competing-risk logistic regression analyses for home-leaving event to concentrations (the second generation only)

				Model 3	
Predictor	Categories	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	1	-
	18-19	1.920	< 0.001	6.82	5.81 – 8.01
	20-21	2.283	< 0.001	9.81	8.24 – 11.66
	22-23	2.296	< 0.001	9.93	8.17 – 12.08
	24-25	1.889	< 0.001	6.61	5.07 – 8.63
	26-27	1.882	< 0.001	6.57	4.48 – 9.63
	28-29	1.668	< 0.001	5.30	2.80 – 10.02
	30-32	0.868	0.158	2.38	0.71 – 7.97
Period	1999-2001	-	-	1	-
	2002-2003	0.246	0.355	1.28	0.76 – 2.15
	2004-2005	0.599	0.017	1.82	1.11 – 2.99
	2006-2007	0.518	0.037	1.68	1.03 – 2.74
	2008-2009	0.489	0.048	1.63	1.00 – 2.65
	2010-2011	0.479	0.051	1.61	1.00 – 2.61
	2012-2013	0.540	0.027	1.72	1.06 – 2.77
	2014-2015	1.231	< 0.001	3.43	2.12 – 5.53

Parental country of origin	Other Western countries	-	-	1	-
	East Europe	-0.158	0.002	0.85	0.77 – 0.94
	West Asia and North Africa	-0.020	0.732	0.98	0.87 – 1.10
	Sub-Saharan Africa	-0.185	0.014	0.83	0.72 – 0.96
	Other Asia	-0.078	0.202	0.92	0.82 – 1.04
Gender	Female	-	-	1	-
	Male	-0.242	< 0.001	0.79	0.73 – 0.85
Region	Helsinki	-	-	1	-
	Turku	-0.104	0.143	0.90	0.78 – 1.04
	Tampere	0.212	0.002	1.24	1.08 – 1.41
Main type of activity	Student	-	-	1	-
	Employed	-0.014	0.810	0.99	0.88 – 1.10
	Unemployed	0.273	0.013	1.31	1.06 – 1.63
	Other	-0.025	0.737	0.98	0.84 – 1.13
Personal income	1st decile	-	-	1	-
	2nd decile	0.807	< 0.001	2.24	1.87 – 2.68
	3rd decile	0.965	< 0.001	2.63	2.16 – 3.18
	4th decile	1.161	< 0.001	3.19	2.62 – 3.89
	5th decile	1.329	< 0.001	3.78	3.08 – 4.63
	6th decile	1.379	< 0.001	3.97	3.21 – 4.91
	7th decile	1.582	< 0.001	4.87	3.91 – 6.06
	8th decile	1.936	< 0.001	6.93	5.56 – 8.64
	9th decile	2.053	< 0.001	7.79	6.16 – 9.85
	10th decile	2.007	< 0.001	7.44	5.73 – 9.65
	No income or missing	-0.119	0.311	0.89	0.70 – 1.12
Parental household income (at age 16)	1st decile	-	-	1	-
	2nd decile	0.002	0.980	1.00	0.82 – 1.23
	3rd decile	-0.104	0.287	0.90	0.74 – 1.09
	4th decile	-0.218	0.021	0.80	0.67 – 0.97
	5th decile	-0.271	0.003	0.76	0.64 – 0.91
	6th decile	-0.180	0.052	0.84	0.70 – 1.00
	7th decile	-0.274	0.003	0.76	0.64 – 0.91
	8th decile	-0.306	< 0.001	0.74	0.62 – 0.88
	9th decile	-0.404	< 0.001	0.67	0.56 – 0.79
	10th decile	-0.486	< 0.001	0.62	0.52 – 0.73
Parental neighbouhood type	Under-representation	-	-	1	-
	Neutral	0.120	0.037	1.13	1.01 – 1.26
	Over-representation	0.724	< 0.001	2.06	1.88 – 2.27
AIC				21 587	
Nagelkerke R^2				0.224	

Note: N = 64 359 (person years). the coefficients are showing the risk of home-leaving to a concentration during the year compared to the reference category. * Outcome-variable: 1 = home-leaving to a concentration, 0 = home-leaving to a concentration is not observed; ** Age is always controlled

Table 12a. Results of competing-risk logistic regression analyses for home-leaving event to non-concentrations (the second generation only)

		Model 3			
Predictor	Categories	b	p-value	odds ratio	95% CI
Age (baseline)**	16-17	-	-	1	-
	18-19	1.765	< 0.001	5.84	5.12 – 6.67
	20-21	2.225	< 0.001	9.25	8.02 – 10.67
	22-23	2.208	< 0.001	9.09	7.74 – 10.69
	24-25	1.893	< 0.001	6.64	5.35 – 8.24
	26-27	2.020	< 0.001	7.54	5.61 – 10.14
	28-29	1.680	< 0.001	5.37	3.19 – 9.05
	30-32	1.106	0.015	3.02	1.24 – 7.39
Period	1999-2001	-	-	1	-
	2002-2003	0.689	0.002	1.99	1.30 – 3.06
	2004-2005	0.827	< 0.001	2.29	1.50 – 3.47
	2006-2007	0.818	< 0.001	2.26	1.50 – 3.43
	2008-2009	0.681	0.001	1.98	1.31 – 2.98
	2010-2011	0.638	0.002	1.89	1.26 – 2.85
	2012-2013	0.537	0.010	1.71	1.14 – 2.57
	2014-2015	1.289	< 0.001	3.63	2.41 – 5.46
Parental country of origin	Other Western countries	-	-	1	-
	East Europe	-0.193	< 0.001	0.82	0.76 – 0.89
	West Asia and North Africa	-0.058	0.024	0.94	0.86 – 1.04
	Sub-Saharan Africa	-0.294	< 0.001	0.74	0.65 – 0.85
	Other Asia	-0.360	< 0.001	0.70	0.62 – 0.78
Gender	Female	-	-	1	-
	Male	-0.353	< 0.001	0.70	0.66 – 0.75
Region	Helsinki	-	-	1	-
	Turku	0.545	< 0.001	1.72	1.57 – 1.90
	Tampere	0.464	< 0.001	1.59	1.44 – 1.76
Main type of activity	Student	-	-	1	-
	Employed	0.218	< 0.001	1.24	1.14 – 1.36
	Unemployed	0.425	< 0.001	1.53	1.27 – 1.84
	Other	0.009	0.891	1.01	0.89 – 1.14

Personal income	1st decile	-	-	1	-
	2nd decile	0.711	< 0.001	2.04	1.75 – 2.37
	3rd decile	0.879	< 0.001	2.41	2.05 – 2.83
	4th decile	1.175	< 0.001	3.24	2.75 – 3.81
	5th decile	1.173	< 0.001	3.23	2.73 – 3.83
	6th decile	1.379	< 0.001	3.97	3.34 – 4.72
	7th decile	1.596	< 0.001	4.93	4.13 – 5.89
	8th decile	1.859	< 0.001	6.42	5.35 – 7.69
	9th decile	1.944	< 0.001	6.98	5.76 – 8.47
	10th decile	1.973	< 0.001	7.19	5.81 – 8.90
	No income or missing	-0.405	< 0.001	0.67	0.54 – 0.82
Parental household income (at age 16)	1st decile	-	-	1	-
	2nd decile	-0.016	0.874	0.98	0.81 – 1.20
	3rd decile	-0.079	0.387	0.92	0.77 – 1.11
	4th decile	-0.281	0.001	0.75	0.63 – 0.90
	5th decile	-0.252	0.003	0.78	0.66 – 0.92
	6th decile	-0.149	0.076	0.86	0.73 – 1.02
	7th decile	-0.221	0.007	0.80	0.68 – 0.94
	8th decile	-0.385	< 0.001	0.68	0.58 – 0.80
	9th decile	-0.370	< 0.001	0.69	0.59 – 0.81
	10th decile	-0.392	< 0.001	0.68	0.58 – 0.78
Parental neighbourhood type	Under-representation	-	-	1	-
	Neutral	-0.083	0.032	0.92	0.85 – 0.99
	Over-representation	-0.543	< 0.001	0.58	0.54 – 0.63
AIC				28 939	
Nagelkerke R^2				0.268	

Note: N = 74 517 (person years). The coefficients are showing the odds of home-leaving to a concentration during the year compared to the reference category. * Outcome-variable: 1 = home-leaving to a non-concentration, 0 = home-leaving to a non-concentration is not observed; ** Age is always controlled

In the model for home-leaving to non-concentrations, the odds of home-leaving for the second generation in all other parental countries of origin are smaller compared to the group of reference. Together, the results of the competing-risk models are aligned with the general delay of the home-leaving event for these groups as noticed earlier. For the second generation with a sub-Saharan parental country of origin, this delay compared to the ones with a Western background appears stronger in the model for non-concentrations (26 per cent reduction in the odds) than in the model for concentrations (17 per cent reduction in the odds). For the East European parental country of origin, the delay appears as the similar coefficients in both models.

6. Discussion

At the beginning of this study about the residential mobility patterns of the second generation, two research questions were introduced:

(1) Are there distinctive residential mobility patterns for the second generation in terms of the timing and the destination neighbourhood type of the home-leaving event compared to those of
    a) the native-born Finns?
    b) the first-generation immigrants?
(2) To which extent the differences in the residential mobility patterns for the home-leavers of different immigrant generations and (parental) countries of origin can be explained by the differences in their demographic and socioeconomic attributes?

This chapter aims to summarize the results and answer the research questions. The findings will be also reviewed in the context of previous research and the accuracy of the theories for spatial integration in depicting the residential mobility patterns of the second generation compared to immigrants and the native-born Finns will be reflected.

6.1. Distinctive patterns of home-leaving

The first research question sought to explore the distinctive residential mobility patterns for the second generation in terms of the timing and the destination neighbourhood type of the home-leaving event compared to those of the first-generation immigrants and the native-born Finns. This question was answered in the descriptive analysis without yet taking the impact of the demographic and socioeconomic attributes into account. In other words, answering this question provides a general overview of the residential mobility patterns of the home-leavers in Helsinki, Tampere and Turku regions between 1999 and 2015.

The pace of home-leaving appears generally similar between the second generation and their native-born Finnish peers when not taking the differences in their backgrounds into account yet. There is a small delay in the timing for the second generation compared to the native-born Finns but this difference is rather small. The first-generation immigrants are experiencing an earlier departure from their parental homes compared to their native-born Finns and the second generation. This same

difference is also visible when comparing the first generation to the second generation in the same category of the countries of origin.

When studying the differences in the timing of the home-leaving event among the second generation by parental countries of origin, the individuals with a Western background are the most similar to the native-born Finns. The West Asian and North African background also suggests a pace of home-leaving similar to the one of the native-born Finns. The second generation with parent(s) from sub-Saharan Africa appears to be the most distinctive group here with their slowest pace of home-leaving.

When studying the destination neighbourhood types for the home-leaving event before adjusting any of the demographic and socioeconomic attributes, it is again clear that the residential mobility patterns of the second generation are similar to the ones of their native-born peers. For the native-born population, both Finns and the second generation, the hazard of moving to a concentration is constantly higher than the hazard of moving to a concentration. For the first-generation immigrants, this relation is the opposite, suggesting mostly a slightly higher hazard of moving to a concentration compared to a non-concentration.

There are also differences in destination neighbourhood types when comparing the immigrant generations by country of origin. The differences between the first and second generation with the same category of the countries of origin are the least pronounced for the Western or West Asian and North African (parental) countries of origin. For these groups, the hazard of moving to a concentration is not elevated for the immigrants either, or it is very close to the one for non-concentrations. For the other countries of origin, the hazard of moving to a non-concentration compared to the concentrations is clearly higher for the second generation than the immigrants.

The similarity of the second generation with a Western parental country of origin to the native-born Finns is expected when acknowledging that almost everyone (97 per cent) of them are actually belonging to the 2.5.-generation, i.e. they are children of "mixed" relationships with one Finnish parent. The similarity of the home-leaving patterns of the individuals with a West Asian and North African background compared to native-born Finns is also possibly linked to the large share of the 2.5-generation among this group. It is also important to notice in the interpretation of the results that the composition of the second generation always reflects the past waves of immigration. The second generation in this study are mostly the children of immigrants who arrived during the first immigration wave in Finland, before the 21st-century. According to current studies, there is a growing share of non-mixed parents in the second generation with a non-Western background (Saikkonen et

al., 2018, p. 53). As the reasons for immigration and countries of departure have become more diverse nowadays, it is possible that more heterogeneity will be observed in future research.

An interesting remark related to the destination neighbourhoods is the differences in changing the neighbourhood when moving out from the parental home. It is generally more common to move between different postal code areas than within the same one in the event of home-leaving. However, there are some differences and the second generation seems to be more mobile than their immigrant peers. Moving within the same postal code area is relatively common for the immigrants with a West Asian or North African background. This exception can be possibly explained by the larger share of individuals living in Tampere and Turku regions compared to the share in other population groups. The postal code areas in these regions are larger spatial entities than in Helsinki. In order to see whether the result here indicated a real difference in the moving distance, or whether it only reflects the different sizes of postal code areas, it would be interesting to incorporate a measure for distance in the future analysis.

Based on the descriptive results providing a general overview to the residential mobility patterns in the early adulthood by immigrant generation and country of origin, the event of home-leaving appears bringing the population with an immigrant background and the native-born Finns closer to each other terms of residential areas. This conclusion is supported by the results obtained by Sabater and Catney (2018) whose study in England and Wales showed that young adults tend to move to ethnically mixed areas more often compared to children or elderly people. This approaching dynamic does not result from the residential mobility behaviour of the individuals with an immigrant background only; the comparison of the Location Quotients on a continuous scale (see Figure 4) revealed that while the neighbourhood environment for immigrants and the second-generation is characterized by decreasing level of concentration over time. For the native-born Finns, on the other hand, there is an increase in the LQ of their living environments. This preliminary analysis did not take into account whether the changes in the LQ results from the residential mobility or the change in the neighbourhood environment but it does, however, provide more information in understanding the results based on the binary indicator for the destination neighbourhood types in the analysis.

6.2. The effect of demographic and socioeconomic predictors

The second research question aimed to inspect whether the differences in the demographic and socioeconomic attributes could explain the differences in the home-leaving patterns between immigrant generation and countries of origin, revealed in the process of answering the first research question. The assumption that all the remaining differences in the residential mobility patterns should be explainable by the demographic and socioeconomic attributes derives from the classic theory for spatial assimilation. The predictors for the logistic regression models for both the timing and destination neighbourhoods of the home-leaving event included basic demographic attributes, i.e., age, period, gender, region, and indicators for personal, i.e., the main type of activity, personal income, and parental socioeconomic status, i.e., parental household income and parental neighbourhood type. These attributes were chosen to the models based on both the theoretical literature on spatial integration and the previous on residential mobility of young adults.

Before estimating the models for home-leaving patterns, based on the descriptive analysis, there are already indications about the differences in the points of departure between different immigrant generation and countries of origin. First, the individuals with an immigrant background have a younger age structure compared to the native-born Finns. Second, the second generation has a generally more advantageous socioeconomic position compared to their immigrant peers. The share of students is higher and unemployed lower for the second generation compared to the first generation with the same countries of origin (the Western background as an exception). Having no personal income is also more common for immigrants compared to their peers in the second generation and the level of parental income is also lower for the first generation immigrants. In addition, a large share of the second generation comes originally from neighbourhoods with a relatively low or neutral representation of inhabitants. This share is notable lower than for their peers in the first generation. However, the second generation appears having lower level of parental income and they are coming more often from concentrations compared to the native-born Finns.

Further explanations for the differences in the home-leaving between the immigrant generations and the native-born Finns can be studied when taking the mentioned differences in the points of departure into account. As the descriptive analysis by country of origin revealed, the need for further explanation for the distinct home-leaving patterns concerns especially the study population with an East European, sub-Saharan African and other Asian (West Asia excluded) since there are not many

differences left to be explained for the population with a Western or West Asian and North African background.

6.2.1. On the timing of the home-leaving

Overall, the analysis of the impact of the demographic and socioeconomic predictors on the timing of the home-leaving event is generally aligned with previous research. The female gender, living in Turku or Tampere region, in the labour force (i.e. employed or unemployed), and high personal income, and low parental income are generally implying an earlier departure from the parental home.

Differences in the timing are rather small between the main types of activity compared to the differences between the personal income deciles. Actually, the differences between the main types of activities can be well explained by differences in their income level, especially between the students and the employed population. Higher personal income suggests a better ability of home-leaving and pursuing independence from the parents. The importance of financial ability to move to live independently from parents also shows in the differences between regions; a delay of home-leaving in Helsinki region is possibly a consequence of the elevated housing prices in the region compared to Tampere and Turku (e.g., Kilpeläinen et al., 2015, p. 16-21). In Finland, the parental financial support for young adults is often indirect and thus, the delaying effect of high parental income might be a result of the better living conditions at the parental home discouraging the young adult from departing (Kilpeläinen et al., 2015, p. 46-47). Skovgaard Nielsen (2015, p. 623) calls this the "feathered nest" effect.

The earlier occurrence of the home-leaving event for the immigrants compared to the native-born Finns can be explained with the differences in their demographic and socioeconomic characteristics. The first-generation immigrants appear actually having a delay in their home-leaving compared to native-born Finns when including all predictors in the analysis. This suggests that they are actually leaving from their parental homes later than their background would suggest them to leave. The gap in the timing between the second generation and the native-born Finns, where the second generation experiences a delay in home-leaving, remains and actually grows when adjusting the demographic and socioeconomic predictors. This delay is small but statistically significant. The early departure of the first generation compared to the second generation can be nonetheless explained by their differences in the background attributes. Together, these results would suggest a weaker effect of the predictors, especially related to the socioeconomic background, on the timing for the individuals with

an immigrant background compared to the native-born Finns. The delay in home-leaving for young adults with an immigrant background is aligned with the results obtained in the Swedish studies (Boverket, 2013).

Based on the results, the effect of the parental income does not seem to have a strong impact on the departure of the home-leavers with an immigrant background that it has on the native-born Finns. The study on the timing of home-leaving in the Danish context by Skovgaard Nielsen (2015) also noticed variation in the impact of the parental income in the timing of the departure; while generally higher parental income suggested a delay in home-leaving, the direction of the effect was the opposite for the Somalis. A study about the experiences of the young adults in Finnish housing markets also suggests that these differences by ethnic groups in the strength and direction of the parental income on the timing of the home-leaving (Kilpeläinen et al., 2015).

When focusing on the differences within the second generation in the interaction analysis, the demographic and socioeconomic predictors manage to explain only the difference in the timing between the Western and the West Asian and North African background. This was already expected based on the descriptive analysis since these groups were originally very similar to each other and to the native-born Finns.

For the other parental countries of origin, there is a delay in the home-leaving compared to the Western background after taking the differences in the demographic and socioeconomic background into account. For most of the countries of origin, there was originally an early timing of the departure compared to the reference group which then reversed in the adjustment. The only exception is the other Asian parental country of origin which predicts a constant delay in home-leaving compared to the Western origin, even after taking all other demographic and socioeconomic differences into account. This could possibly suggest a presence of cultural norms related in the departure from the parental home and a pattern of segmented assimilation where socioeconomic and spatial closeness to the mainstream population, as seen in this group in the analysis of neighbourhood types, does not necessarily suggest abandoning cultural norms related to family relations for example. Nonetheless, the category for the “other Asian countries” is rather heterogeneous and includes multiple countries of origin, and thus the results are not representing one culture only. Non-register based studies with more specific categorization within this group are necessary in order to further understand this result.

The weaker impact of the socioeconomic predictors for the individuals with an immigrant background, both in the first and second generation, resulting in a general delay of home-leaving,

might possibly be a consequence of discrimination that the people with an immigrant or ethnic minority background face in the housing markets, as noticed in previous studies (e.g., Kilpeläinen et al., 2015; Öblom & Antfolk, 2017). The effect of the demographic and socioeconomic predictors is distinctively small on the timing for the individuals with an (other) Asian parental country of origin, who are experiencing a constant delay in their home-leaving. This could suggest a presence of culture-specific factors in the timing of home-leaving for this group.

6.2.2. On the destination neighbourhood type

The results suggest that the higher tendency of moving to a concentration for the second generation compared to the native-born Finns is due to differences in their demographic and socioeconomic background. These differences cannot however completely explain the high tendency of moving to concentrations for the first-generation immigrants compared to the native-born Finns, and compared to the second generation. A large part of the difference in moving to a concentration between the first generation and native-born Finns can be explained with the given background attributes but still, the high odds for immigrants of moving to a concentration, and low odds of moving to a non-concentration, remain after taking all predictors into account in the analysis here.

Overall, the first-generation appears having a distinct residential mobility pattern in terms of destination neighbourhood types for the event of home-leaving while the differences between the second-generation and the native-born Finns in moving to concentrations can be well explained with the differences in their demographic and socioeconomic background. These results correspond to the assumption made in the classic theory for spatial assimilation and they are also aligned with previous research (Park et al., 1967; Tran, 2019; Skovgaard Nielsen, 2016).

The parental neighbourhood type has a significant impact on the destination neighbourhood type for all home-leavers in general but its effect is especially important in understanding the differences in destinations between the immigrant generations here and compared to the native-born Finns. The parental neighbourhood type, in terms of the share of inhabitants with an immigrant background, appears as an important predictor for whether the home-leaver moves to a concentration or not even after taking all the other demographic and socioeconomic attributes into account.

The tendency of moving between neighbourhoods with a similar demographic composition is also noticed in previous research from various national contexts (e.g., Skovgaard Nielsen, 2016; Tran,

2019; van Ham ym., 2014). A possible explanation for this general impact of childhood neighbourhood environment to the individual's neighbourhood environment at young adulthood, and later life-stages, is possible linked to the development of housing biographies. Previous research on lifestyles and their impacts on the individual's residential mobility behaviour had noticed that the past housing locations impact the individual's future location choices (Scheiner & Kasper, 2003, p. 322–323). This would suggest that growing up in a given type of neighbourhood would lead to a preference of moving to a similar type of environment in later life-stages.

The strong importance of the parental neighbourhood type in explaining the difference in moving to a concentration for both second and first-generation compared to native-born Finns, suggest that the home-leavers with an immigrant background are more often originally from these type of neighbourhoods compared to their native-born peers. One possible common factor which could have impacted both the neighbourhood environment for the parents of the home-leaver and his or her own destination neighbourhood could be the discrimination in the housing markets.

The study by Öblom and Antfolk (2017) revealed discrimination in the private rental housing markets in Finland practised by the landlords which impacted especially males with Arabic-sounding names. Their study was conducted as a field experiment by sending housing applications with Finnish, Swedish and Arabic-sounding names (Öblom & Antfolk, 2017). Even if their study did not include other non-native names, it suggests that the non-native Finns face difficulties in entering and acting in private rental housing markets due to the discrimination by these "gatekeepers". In the case of home-leavers with an immigrant background, this phenomenon might appear as double discrimination both based on their young age and immigrant background. Both the young adults and (non-Western) immigrant population tend to be over-represented in the rental housing markets compared to homeownership (Andersson et al., 2010).

The personal income seems to suggest a slight impact on the destination neighbourhood type, meaning that higher personal income suggests an increased tendency of moving to a non-concentration while its effect is weaker for the concentrations. This might be a consequence of the increased financial ability to choose the destination. Unlike in the study from the Dutch context by Hochstenbach et al. (2017), there is no evidence on the gentrifying effect of parental income in Finnish cities since here, the effect of the parental household income is similar in both destination neighbourhood types. Again, this might be a consequence of the indirect form of parental financial support in Finland.

The higher tendency of moving to a concentration for the second generation in all other parental countries of origin compared to the ones with a Western background can be well explained by their differences in the demographic and socioeconomic characteristics. The most distinctive groups in terms of moving to concentrations are the home-leavers with an East European or sub-Saharan background because they actually move less to concentrations compared to the Western background than their demographic and socioeconomic characteristics would suggest. However, these lower odds must be interpreted together with the result in the analysis of the timing of the global home-leaving event which suggested a delay for these groups. For the second generation with an East European parental country of origin, the predictors have a clearer impact on the timing than the destination neighbourhood type of the home-leaving event. For the ones with a sub-Saharan background, the odds of moving to a concentration are however clearly lower in the model for non-concentration compared to the Western background than the odds in the model for concentrations. In other words, this population group does not only experience a delay in their home-leaving but there are also indications, that their tendency of moving to a concentration is higher than moving to a non-concentration.

The majority of the second generation in the Sub-Saharan category for the parental country of origin are actually descendants of Somali-immigrants. The share of the 2.5-generation within the second generation was also the lowest in the category of sub-Saharan Africa. Previous studies have shown that the discrimination Somalis-immigrants face in the Finnish housing markets have had an important role in shaping their housing choices and preferences (Virtanen, 2008; Dhalmann, 2011). While these studies have focused on the experiences of the first-generation immigrants, they can contribute to understanding the impact that discrimination in housing markets can have on both the parents' and their descendants' neighbourhood environments.

7. Conclusion

This master's thesis aimed to provide empirical knowledge on the residential mobility patterns of the second generation in Finland by studying the timing and the destination neighbourhood types of their home-leaving events. The results provide empirical evidence on the general accuracy of the classic spatial assimilation theory in depicting the residential mobility patterns of the second generation in Helsinki, Tampere and Turku regions. For the most part, the second generation resembles the native-born population in their timing and destination neighbourhood types of the home-leaving event.

Compared to their immigrant peers, the second generation is less likely to move to concentrations, i.e., neighbourhoods with an over-representation of inhabitants with an immigrant background. The first generation remains distinctive in their mobility patterns even after taking the differences in their demographic and socioeconomic background into account.

There are however indications about alternative models for spatial integration, suggesting that socioeconomic integration does not necessarily translate to a similarity in residential mobility behaviour for groups with an immigrant background compared to the native-born Finns. This appears in the general delay in the departure from parental homes for the young adults with an immigrant background, both in the second and first-generation, compared to their native-born Finnish peers. One possible explanation for this is discrimination in the housing markets which is both impacting the possibilities for the young adults to pursue their independent housing careers and the neighbourhoods where they are growing up in. The remaining differences in the timing, after taking the differences in the demographic and socioeconomic background into account, is small but significant enough to be taken into account in further studies.

Being among one of the first studies attempting to understand the residential mobility patterns of the second generation in Finland, there are many questions left unexplored. Firstly, this study focused on the differences between horizontal generations by comparing young adults at the same life-stage. Since the spatial integration theories discuss the changes in the residential location and mobility behaviour in from parents to children, a vertical comparison would be necessary for the future. The tendency of changing residential location decreases after age 30 (Statistics Finland, 2018a). Since the majority of the second generation is still young, more time is required in order to compare their stabilized housing locations to those of their parents. Secondly, since this study is delimited to first-time home-leaving only, it would be interesting to see whether there any differences in the frequency and reasons in returning to the parental home after the first departure by immigrant generations and countries of origin.

In addition, it would be interesting in future research to see whether the change in family status in the home-leaving event differs between immigrant generations and countries of origin. For example, a Dutch study noticed that the early timing of the home-leaving for Turks and Moroccans compared to native-born Dutch was linked to the simultaneous transition to marriage and parenthood (Bolt & Kempen, 2002). The information about the family status was not possible to include in the analysis as a predictor in this study since it was already used as an indicator for the occurrence of the global

home-leaving event already. In the results, there are however indications about the presence of the link between cultural norms related to the timing of the home-leaving in the case of the second generation with an Asian background.

It is important to notice that defining the second generation differently, for example, by including the 1.5 and/or excluding the 2.5-generation would produce results slightly different than the ones presented here. The inclusion of the 2.5-generation in this study is assumedly bringing the results closer to the native-born Finns, as noticed here with the Western and West Asian and North African parental countries of origin. The differences could thus appear stronger if using a stricter definition for the second generation. Comparisons of the analysis conducted with different definitions would be interesting to conduct in future studies with larger population size than here. In addition, a common definition for the second generation would be required from future studies in order to better compare the results.

Finally, this study aims to contribute to the discussion on the future development of ethnic segregation in Finnish cities. Based on the results, the native-born descendants of immigrants can be considered as important actors of desegregation in Finnish cities. This conclusion does not suggest that there is no dynamic of segregation present – current studies show that for example in Helsinki, there has been strengthening, although moderate, differentiation of neighbourhoods in terms of their share of inhabitants with an immigrant background (e.g., Vilkama & Hirvonen, 2018). It is, however, important to highlight the simultaneous dynamic of desegregation occurring at the individual-level residential mobility behaviour, not only among the second generation but also among the home-leavers in general. The growing number of the second generation born in Finland, entering the housing markets, suggests a transforming force for the urban structure of the Finnish cities. Acknowledging and studying their role in urban development is thus necessary in order to fully understand the complexity of ethnic segregation in Finnish cities at the moment and in the future.

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Notes

[1] Native-born Finn: native-born with native-born parents. The definition here includes the local minorities, i.e., Finnish Swedes, Sami people, Roma people and the descendants of immigrants from third-generation onwards.

[2] The contemporary European literature and discussion prefer the term "integration" in describing the adjustment of immigrants and their children in society while the US-literature uses the term "assimilation" to describe a similar process. The latter has a negative connotation in Europe (e.g. Saukkonen, 2013, p. 81-84) but in this study, they are used as synonyms depending on the origin of the literature or study.

[3] Categories for parental countries of origin:

1. Other Western countries (Western Europe *, America, and Oceania)
2. Eastern Europe (including the former USSR) *
3. West Asia (Afghanistan, Azerbaidzhan, Bahrain, Georgia, Iraq, Iran, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tajikistan, Turkey, Turkmenistan, the United Arab Emirates, Uzbekistan, Yemen) and North Africa (Morocco, Tunisia, Algeria, Egypt, Sudan)
4. Sub-Saharan Africa
5. Other Asia

* The division into Western and Eastern Europe is based on the historical division during the Cold War. East Germany is an exception which is here included in Western Europe.

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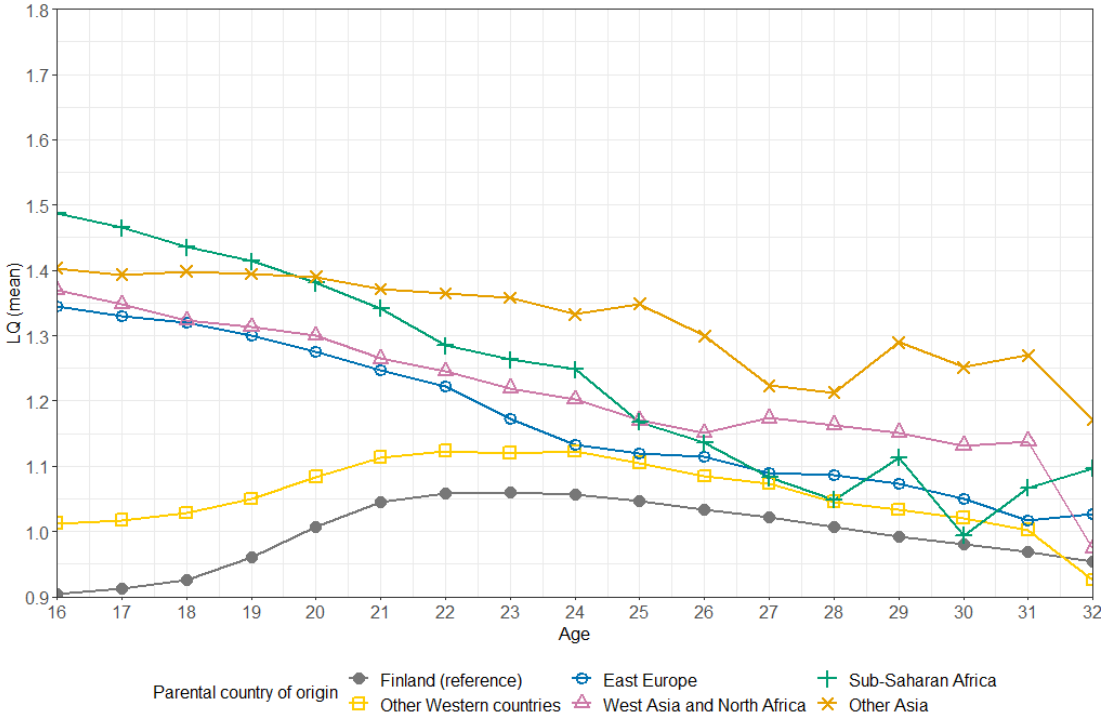
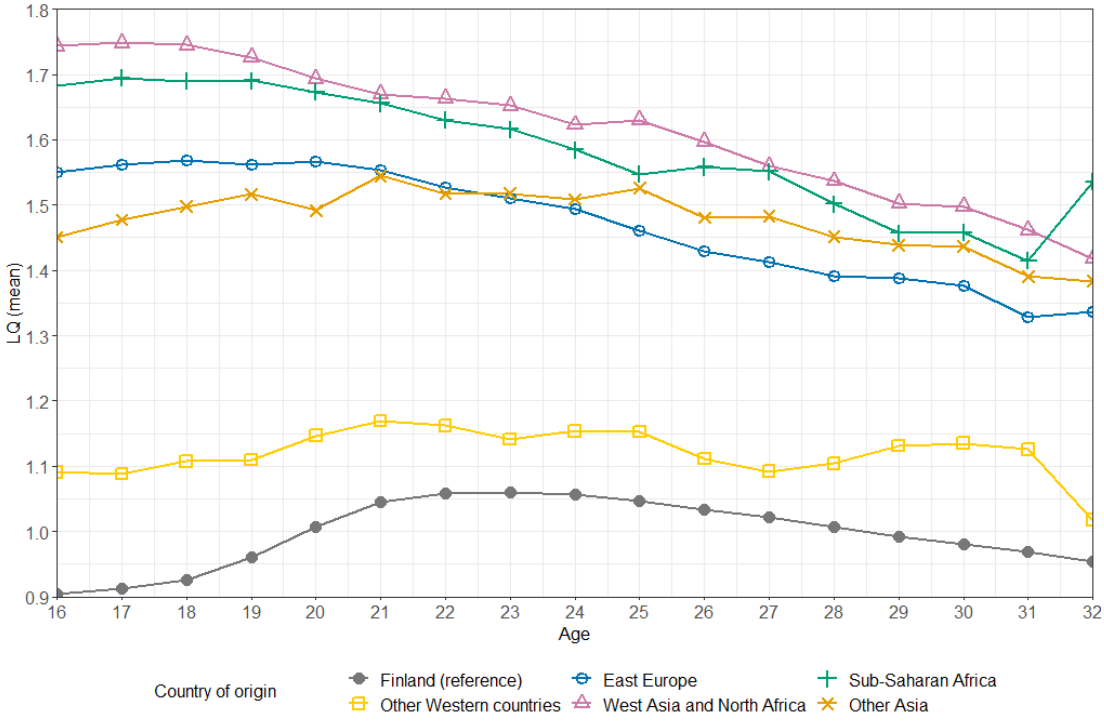
Appendices

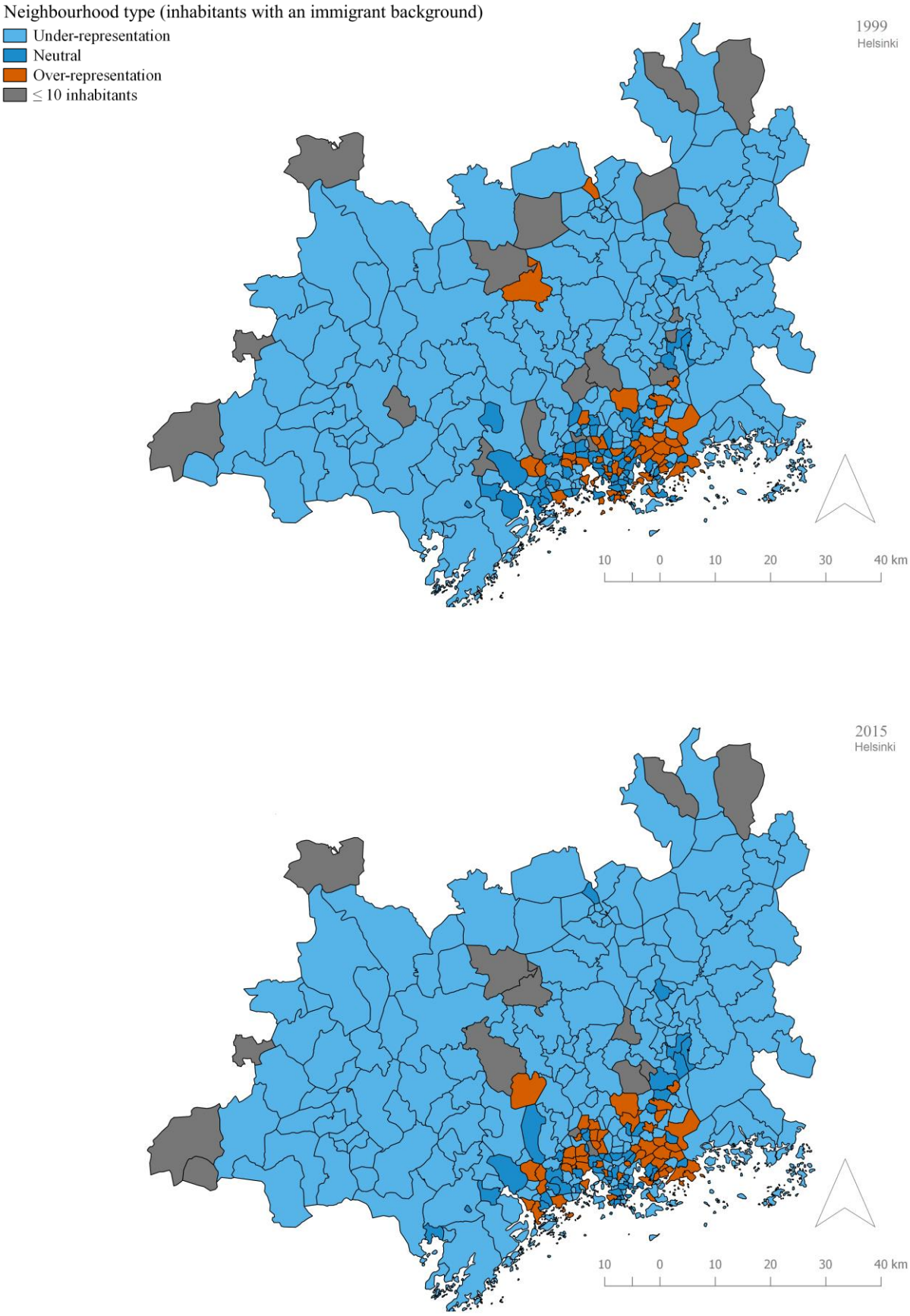
Appendix 1. Average Location Quotient for the second generation by parental country of origin in Helsinki, Tampere and Turku regions (1999–2015)



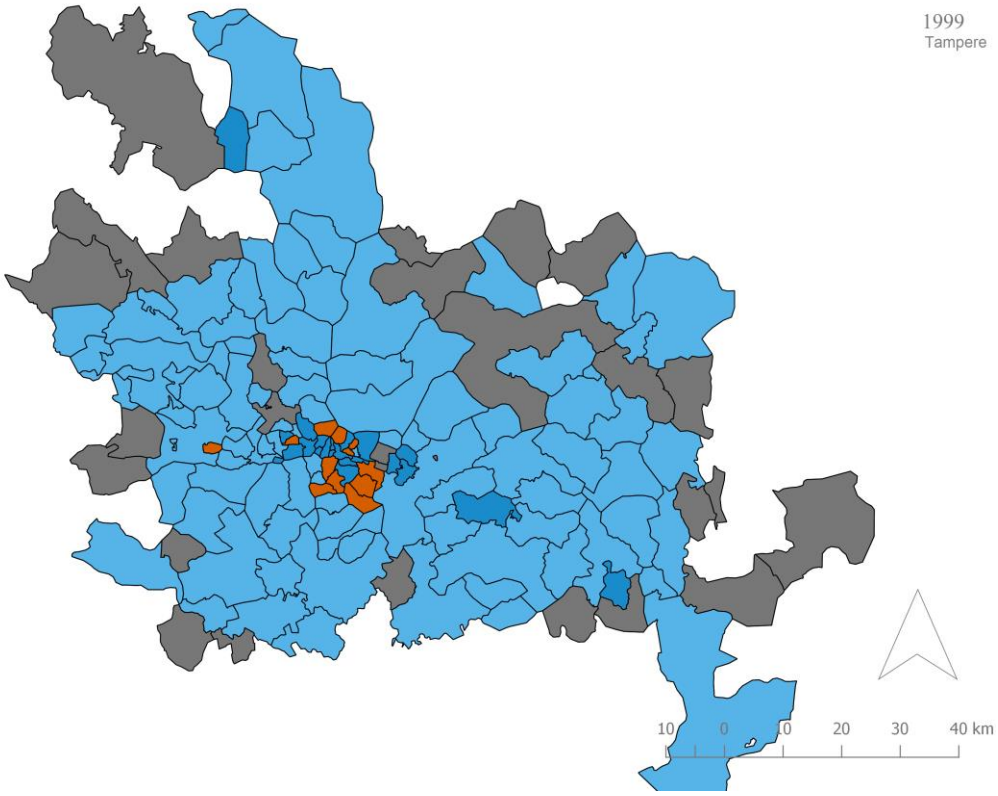
Appendix 2. Average Location Quotient for the first generation by country of origin in Helsinki, Tampere and Turku regions (1999–2015)

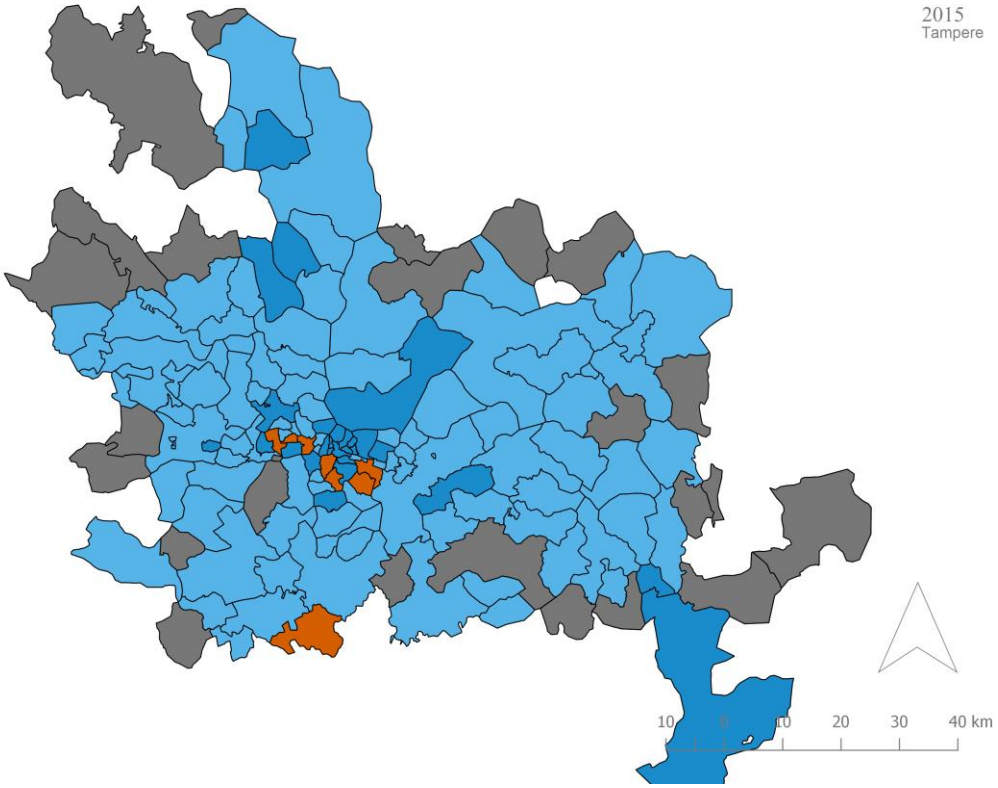


Appendix 3a. Neighbourhood types in Helsinki (1999 & 2015)

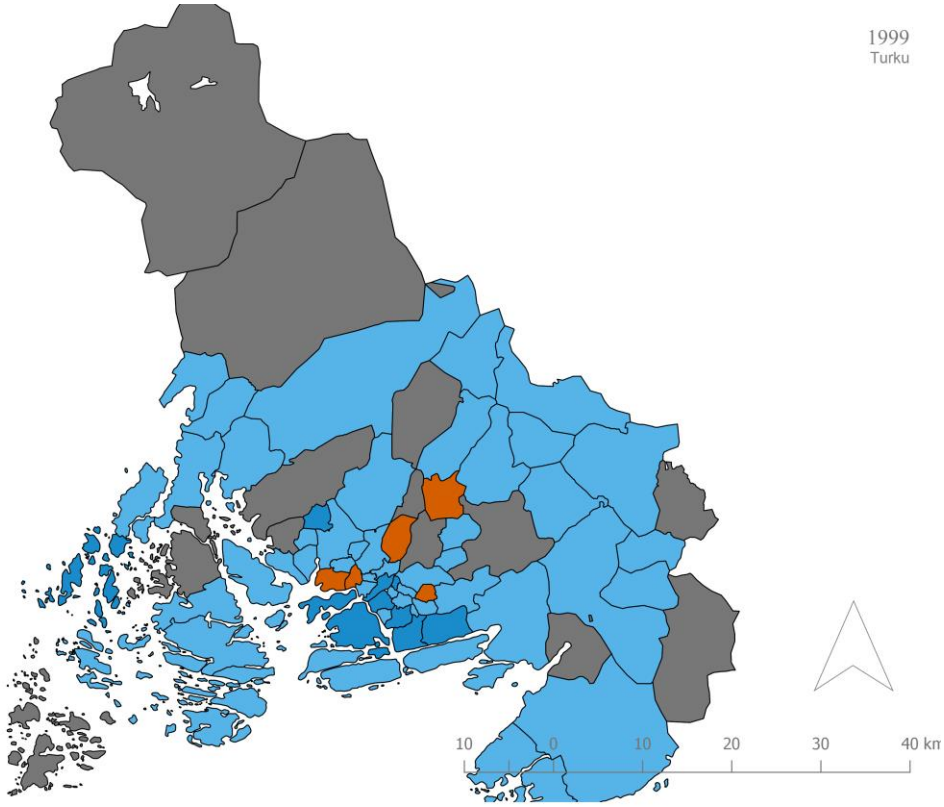


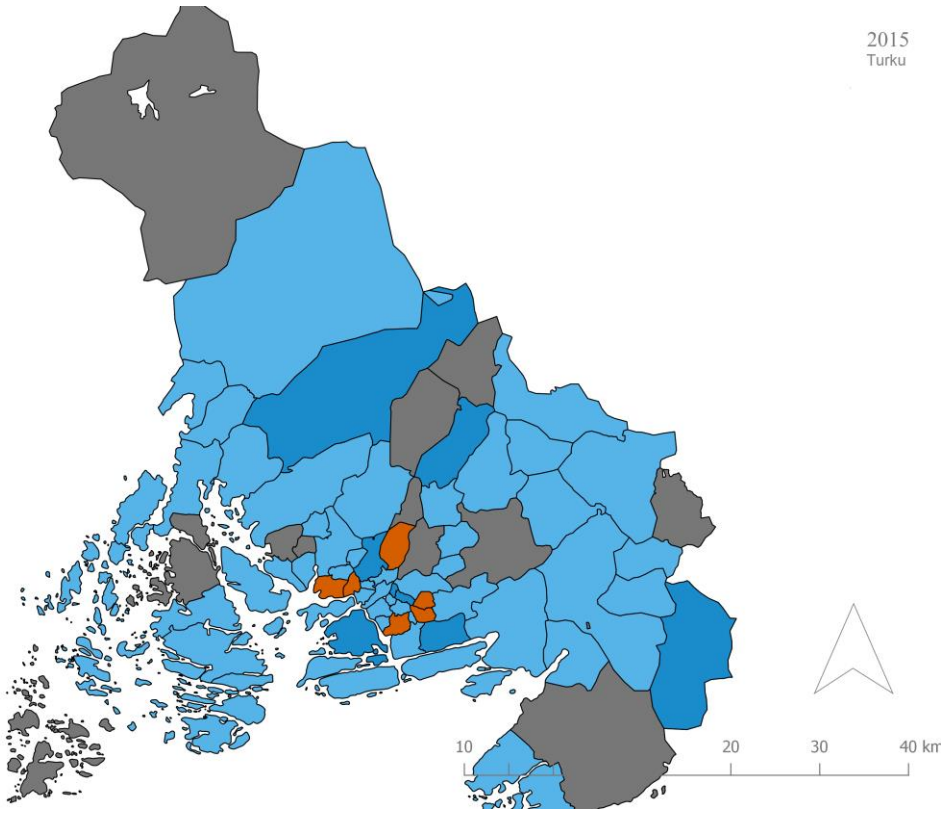
Appendix 3b. Neighbourhood types in Tampere (1999 & 2015)





Appendix 3c. Neighbourhood types in Turku (1999 & 2015)





Appendix 4. Transitions between neighbourhood types for home-leavers in Helsinki, Tampere and Turku regions (1999–2015)

	Neighbourhood type											
	From concentration						From non-concentration					
(Parental)* country of origin	to concentration	%	to non-concentration	%	Total	%	to concentration	%	to non-concentration	%	Total	%
Finland	23 307	50.7	22 670	49.3	45 977	100	34 822	24.3	108 581	75.7	143 403	100
Second-generation: total	*1 912*	56.6	*1 464*	43.4	*3 376*	100	*1 359*	27.3	*3 619*	72.7	*4 978*	100
Other Western countries	575	52.3	525	47.7	1 100	100	693	26.1	1 964	73.9	2 657	100
East Europe	483	56.8	368	43.2	851	100	272	27.0	734	73.0	1 006	100
West Asia and North Africa	354	56.9	268	43.1	622	100	160	26.7	439	73.3	599	100
Sub-Saharan Africa	183	58.8	128	41.2	311	100	95	35.8	170	64.2	265	100
Other Asia	317	64.4	175	35.6	492	100	139	30.8	312	69.2	451	100
First-generation: total	*3 393*	66.2	*1 732*	33.8	*5 125*	100	*1 056*	33.6	*2 088*	66.4	*3 144*	100
Other Western countries	108	56.8	82	43.2	190	100	79	25.0	237	75.0	316	100
East Europe	1 949	67.0	959	33.0	2 908	100	609	35.3	1 116	64.7	1 725	100
West Asia and North Africa	545	61.2	346	38.8	891	100	149	29.2	361	70.8	510	100
Sub-Saharan Africa	471	70.3	199	29.7	670	100	105	41.2	150	58.8	255	100
Other Asia	320	68.7	146	31.3	466	100	114	33.7	224	66.3	338	100
Total	28 612	52.5	25 866	47.5	54 478	100	37 237	24.6	114 288	75.4	151 525	100

* Prioritizing the foreign-born parent